FLIGHT
The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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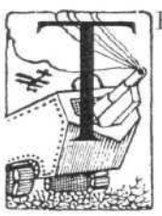
1927

Jan. 13 .... **Professor F. C. Lea, D.Sc., M.Inst.C.E., M.I.Mech.E. "Some Experiments on the Effects of Repeated Stresses on Materials," before Inst.Ae.E.**

EDITORIAL COMMENT.



THE decision of the Air Council to publish, from H.M. Stationery Office, the Memorandum by the Secretary of State for Air laid before the Imperial Conference, 1926, together with the Report of the Imperial Air Communications Special Sub-Committee, will be welcomed by all who believe in the urgent necessity of, as Sir Samuel Hoare has often expressed it, "making the Nation 'air-minded.'"

Imperial Air Communications

The publication, which bears the title "The approach towards a System of Imperial Air Communications," was issued yesterday, December 15, and there has thus been but little opportunity for a detailed study of it. It is thought, however, that a brief reference to it this week may be acceptable to our readers, many of whom will, doubtless, wish to purchase for themselves a copy of the Memorandum, which contains a sheaf of maps and illustrations, and forms probably the most detailed review of civil aviation that has ever been prepared in any country, embracing as it does, the civil air activities of the whole world.

Before commenting upon the various sections of the publication in question it may be of assistance to give a very brief summary of the contents. The first section gives the report of the special Sub-Committee on Imperial Air Communications set up by the Imperial Conference. Then follows the statement on Imperial Air Communications made to the Imperial Conference by Sir Samuel Hoare, Secretary of State for Air. The text of the Memorandum laid before the Imperial Conference by Sir Samuel Hoare is given in full, and occupies the greater part of the publication.

In the report of the Sub-Committee on Imperial Air Communications it is stated that the sub-committee are convinced that the development of Imperial air communications, both by airship and aeroplane, is of sufficient importance to merit the early and continuous attention of the Governments of the several parts of the Empire, and accordingly the sub-committee recommends that the Imperial Conference notes with

satisfaction the prospective opening of a regular air service between Cairo and Karachi and of an experimental service between Khartoum and Kisumu; also the decision of the British and South African Governments to carry out a series of experimental flights to connect as far as possible with the latter service; and the decision of the Australian Government to arrange for flights by the Royal Australian Air Force from Australia towards Singapore to link up with similar flights of the Royal Air Force from Singapore towards Australia. The Imperial Conference recommends that the development of other air services should receive the early consideration of the Governments concerned, and that in this connection particular attention should be paid to the maintenance of existing, and the construction of new, aerodromes as far as local resources permit, with a view to the ultimate creation of a complete system of Empire air routes.

In view of the great potentialities of the airship and the present lack of constructional and other facilities it is recommended that the Governments of the Dominions concerned and India should examine the possibility of erecting nucleus mooring-mast bases to be available for demonstration flights in 1928-29 by the two airships now under construction, and of instituting such preliminary meteorological investigations as may be necessary to facilitate these demonstration flights; and that His Majesty's Government in Great Britain should consider the erection of a second shed at the Royal Airship Works at Cardington.

It is further recommended that an Imperial Air Conference should be held in 1928 or 1929 at some suitable Imperial centre, to report progress and to consider what further action can be taken for the development of Imperial air communications. The conference notes with appreciation the invitation of the Dominion of Canada that this conference should take place in Canada.

Finally, the sub-committee expresses the opinion that the present system of communicating information in regard to civil aeronautics should be continued, and that exchanges should be made from time to time between the civil aviation officials of Great Britain and the Dominions and India, as far as the limitations of staff and local considerations permit. The recommendations made in the report of the sub-committee were unanimously adopted by the Imperial Conference at its fifteenth meeting on November 19, 1926.

The statement on Imperial Air Communications made to the Imperial Conference by Sir Samuel Hoare has already been given in abbreviated form in FLIGHT.

The Memorandum by Sir Samuel Hoare, under the title "The Approach towards a System of Imperial Air Communications," deals in four sections, with the rise of air transport during the years 1920–26, the first Imperial aeroplane services, progress towards the establishment of Imperial airship services, and the future of Imperial air transport. Six appendices contain information of a very detailed nature relating to the aeroplane transport development of the principal nations; the regulation and administration of civil aviation; aeroplane transport operating costs; the organisation of the cross-Channel aeroplane services; notes on the organisation of airship services; and some special uses of aeroplanes.

The statistics contained in this volume, and particularly in the appendices, provide fascinating reading. Unfortunately there has not been sufficient time in which to go through these, much less to consider their significance, for us to be able to comment on them in this week's issue of FLIGHT. We hope to return to the subject in detail in subsequent issues.

* * *

Airships The subject of airships in connection with Imperial air communications forms a fairly large proportion of Sir Samuel Hoare's Memorandum, and even a cursory glance through the publication appears to indicate the importance attached by governments to this branch of civil aviation. FLIGHT has, on the subject of the new five million cubic foot airships, expressed some doubt in the past as to the wisdom of launching out with such an ambitious programme, and we have pointed out that Great Britain's previous experience of airship design and construction was barely sufficient to make the undertaking of building airships of this size more than a gigantic experiment. We have also repeatedly pointed out the need for the very greatest caution, and for as thorough experimentation as the time and capital available would allow. In this connection the statement made in Sir Samuel Hoare's Memorandum under the heading "The Progress of the Experimental Programme, 1924–26," is fairly reassuring. The statement points out that "work under the experimental programme has now been proceeding for about 18 months, and that the varied and complicated problems of airship construction and operation have been approached by a cautious and scientific method, and that a considerable amount of practical progress has been made. Important investigations into the principles of airship construction have been carried out and submitted successfully to the test of full-scale experiment." So far so good. What the Memorandum does not point out, but which is by now a secret known to everyone, is that the constructional work has been handed over to a private firm which already had established a very high reputation for its work on all-metal (and more particularly all-steel) construction of aeroplanes. It is believed that this firm has been given a fairly free hand, and although one may not go into detail at the moment, we personally regard this fact as a happy augury. A thorough knowledge of the constructional material—in this case steel—its treatment, peculiarities and application is an essential factor in the equation of success, and the fact that the firm in question has the entire handling of the steel, from the raw material to the finished components, should make for that close co-operation between design office and shops which is so important in all engineering but probably nowhere more so than in the case of a new airship of a somewhat experimental character.

The Memorandum admits that much yet remains to be done, but one can at any rate agree cordially with the remarks of the Secretary of State for Air when he concludes this section of his Memorandum by saying: "When this experimental programme has been successfully completed there can be no doubt that airship design and construction will have been placed upon an entirely new and more practical basis; and the way will then be clear for carrying out the further experiments which are required to establish the practicability of regular airship operation throughout the Empire."

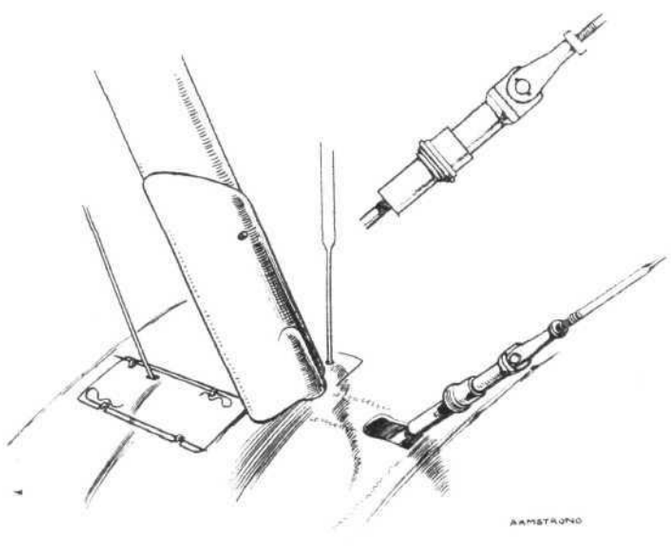
FLIGHT
AIRCRAFT ENGINEER & AIRSHIPS

The PARIS AERO SHOW 1926

In the issue of FLIGHT, *dated December 2, 1926, we published an advance report dealing with the aircraft exhibited at the Tenth International Aero Exhibition at Paris, the report being illustrated by photographs and drawings. Except in one or two cases (where machines failed to arrive, or where a type was shown different from that which it had orignally been intended to exhibit) our advance report proved correct, and formed a useful guide to the exhibits of the various French and foreign aircraft firms. Our first report was devoted mainly to specifications of the machines, the purpose for which they were designed, their main dimensions, weights, etc., and their performance. Constructional features were not dealt with at any great length, it being considered preferable to defer a critique of these until our representatives had had an opportunity of examining the machines in detail and obtaining photographs of the more interesting ones, as well as sketches of such constructional details as appeared likely to be of interest, sometimes on account of their merit or in some cases otherwise. In the space which can be devoted to the Paris Show machines it is not possible to publish a detailed description of every machine, nor would such a description necessarily be of any particular value In the following notes, however, attention is called to some of the outstanding features of the more interesting machines. Those wishing to compare performances with the structural design of any given aeroplane are requested to refer to our December 2 issue, since lack of space prevents us from repeating the performance data in the present issue.*

ARMSTRONG-WHITWORTH

The sole representative of Great Britain at the Paris Aero Show, as far as aircraft is concerned, fell a victim to French methods of transport, having been sent in its packing case instead of by air. It might be asked why the machine was not flown over, as it might very easily have been. The reply to that is that, after leaving the Grand Palais, the "Ajax" is going farther afield, to a destination which seemed to be known to everyone at the show, but which is not to be made public in cold print. As a packing case had to be made for the machine for its journey onwards from Paris, it was thought that it might as well go to Paris in its case, and thus preserve its finish untarnished. To all appearances there was ample time for it to reach the show before the opening day, but fate had decreed otherwise, and the "Ajax" made a somewhat belated appearance. Exactly how it arrived we were never able quite to discover. When visitors left the Grand Palais one evening the Armstrong-Whitworth stand was empty, and when the doors were opened the next morning the machine stood there looking as innocent as if it had been there the whole time. Probably Mr. Proctor and his assistants could throw some light on the subject if they chose, and certainly the task of getting the machine in overnight, getting it erected, and tidying up the stand must have meant hours of hard



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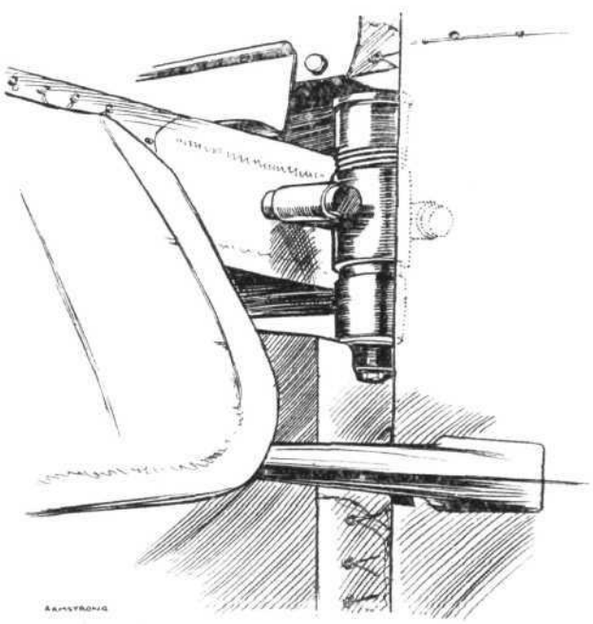
ON THE ARMSTRONG-WHITWORTH "AJAX": Spring-loaded turnbuckles are incorporated in the landing wires so as to keep them taut under all conditions. The strut attachment is neatly faired in by an aluminium sleeve held in place by a split pin.



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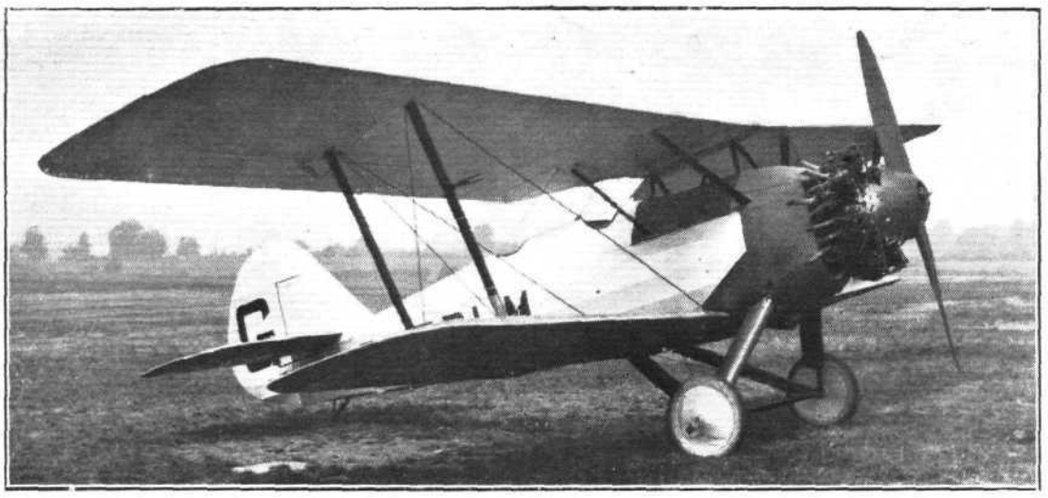
The tail trimming gear of the Armstrong-Whitworth "Ajax" is mounted externally and is very accessible.



Britain's sole representative: The Armstrong-Whitworth "Ajax" with Armstrong-Siddeley "Jaguar" engine.

work under great difficulties. The main point is that the "Ajax" did arrive, and we are not at all certain that it did not get a great deal more attention by its late arrival than it might have done otherwise. At any rate for the first two or three days it received visits from a very large number of people, not only visitors to the show but also exhibitors, who were somewhat naturally keenly interested in the only example of British aircraft design and construction. That the machine created a very favourable impression cannot be doubted, and without being accused of bias in the matter we can say that the "Ajax" compared favourably with other machines in its class, its small size, compact lay-out, and generally clean appearance being such as to stand out in marked contrast to many other machines.

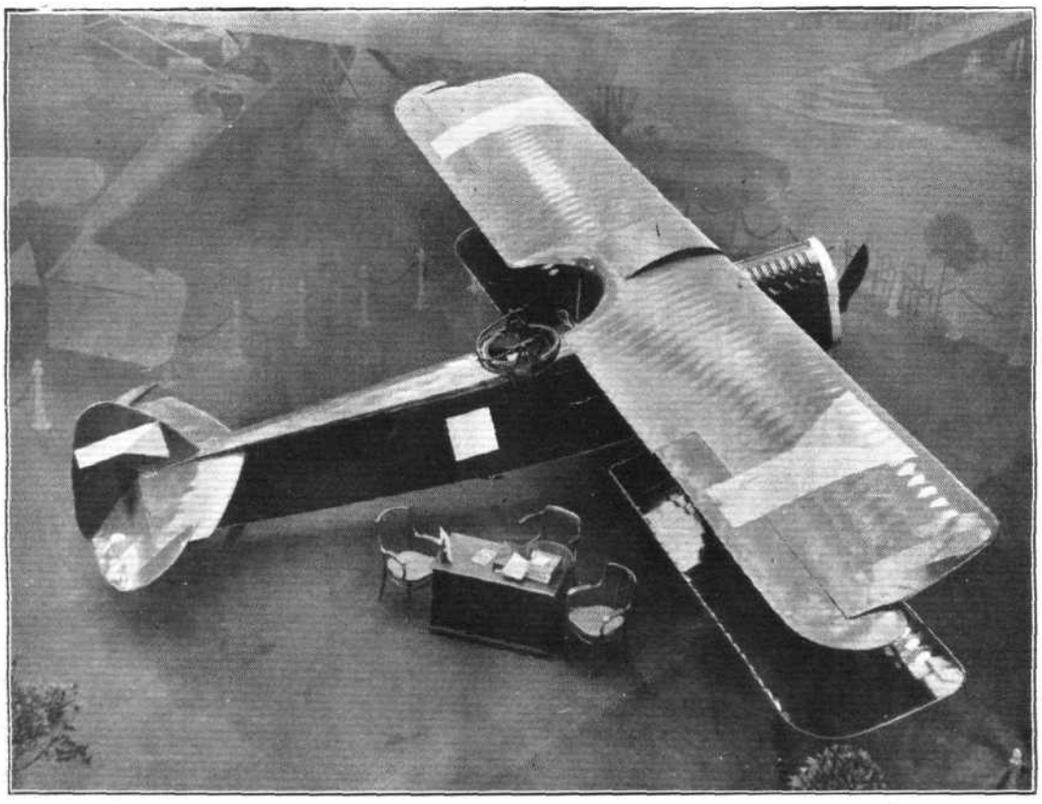
The Armstrong-Whitworth "Ajax" is very similar to the "Atlas" produced by Sir W. G. Armstrong-Whitworth Aircraft, Ltd., and which has recently been chosen as the British Army co-operation two-seater. The "Ajax" is, however, a general purpose machine, which may, if desired, be fitted with floats and used as a seaplane. As a matter of fact, on the Armstrong-Whitworth stand a pair of Short Duralumin floats for the machine were exhibited, and like the machine itself these attracted a good deal of attention, the more so as the French have not until comparatively recently had a great deal of experience in seaplane design. A drawing by Geoffrey Watson represented the "Ajax" as a twin-float seaplane.

One or two features of the "Ajax" are illustrated by sketches. The tail-trimming gear is very neat, its details being well shown in a sketch which is self-explanatory. Another interesting little "gadget" is the spring-loaded wire strainer in the anti-lft wires, the spring taking up any slack that may develop when the machine is flying, and thus preventing the vibration usually present in anti-lift wires. The sleeve covering the inter-plane strut attachments is another clever feature found on the "Ajax." When the split pin is withdrawn the sleeve can be slid along the strut, exposing the terminal fittings of the pinched tube attachment to the wing spar.

Compared with the undercarriages of some of the machines at the show, that of the "Ajax" is an extremely workmanlike affair, with its neat oleo shock-absorbing gear and sturdy common-sense fittings. It is noticeable that a much longer travel is provided than is found on the majority of foreign aeroplanes, and it may thus be assumed that the shock-absorbing qualities are correspondingly better.

AERO TOVARNA LETADEL

OUT of the two machines which the Aero Co. of Prague had intended to exhibit, only one actually was to be seen



The Aero Ab.11 is fitted with a 240 h.p. "Perun" engine. The machine is of straightforward orthodox design and construction.

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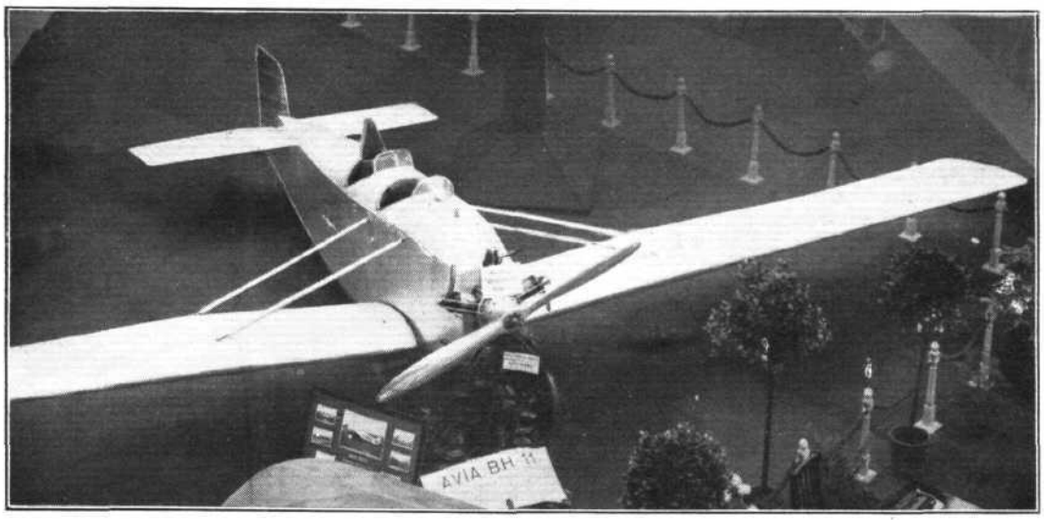
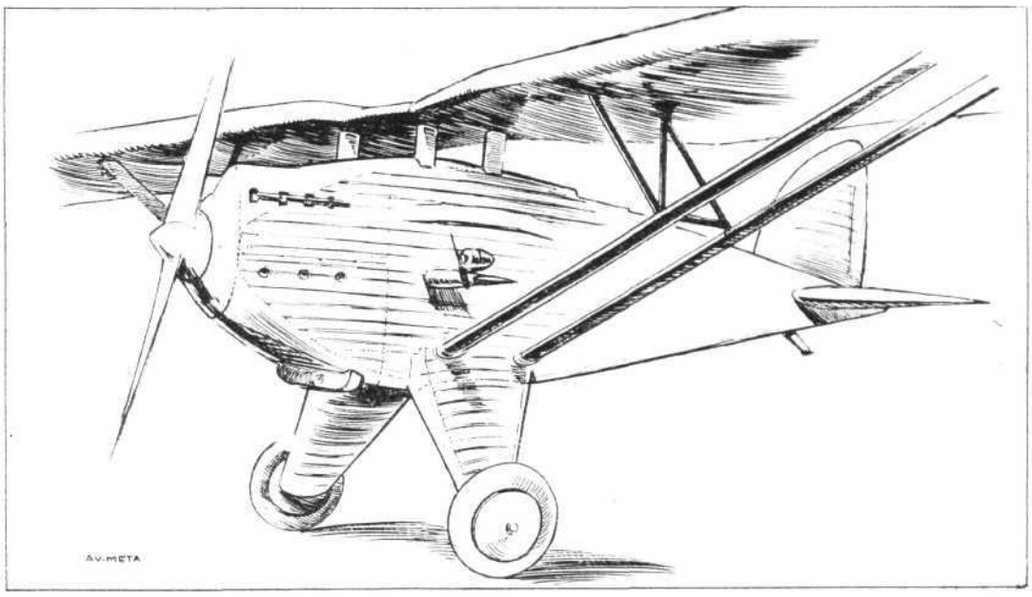


The "Avia B.H.11," with 60 h.p. Walter engine is a two-seater light 'plane with many victories to its credit, most recently that of the "Coppa d'Italia."

["FLIGHT" *Photograph*

on the stand, and it was gathered that the other machine was expected to fly to Paris from Prague. Presumably bad weather had interfered with the flight, as the machine did not put in an appearance during our stay at the show.

Concerning the sole Aero machine exhibited on the Czechoslovak stand (which contained all the Czechoslovak machines exhibited), the Ab.11, with "Perun" engine, there is little to be said, as the design and construction of the machine are perfectly simple and straightforward. That the machine must be efficient aerodynamically seems evident from the performance figures, according to which the maximum speed at ground level is 215 km./h. (133·5 m.p.h.).



The Avimeta AVM88 is an all-metal parasol monoplane. Note the "Oxford bags"

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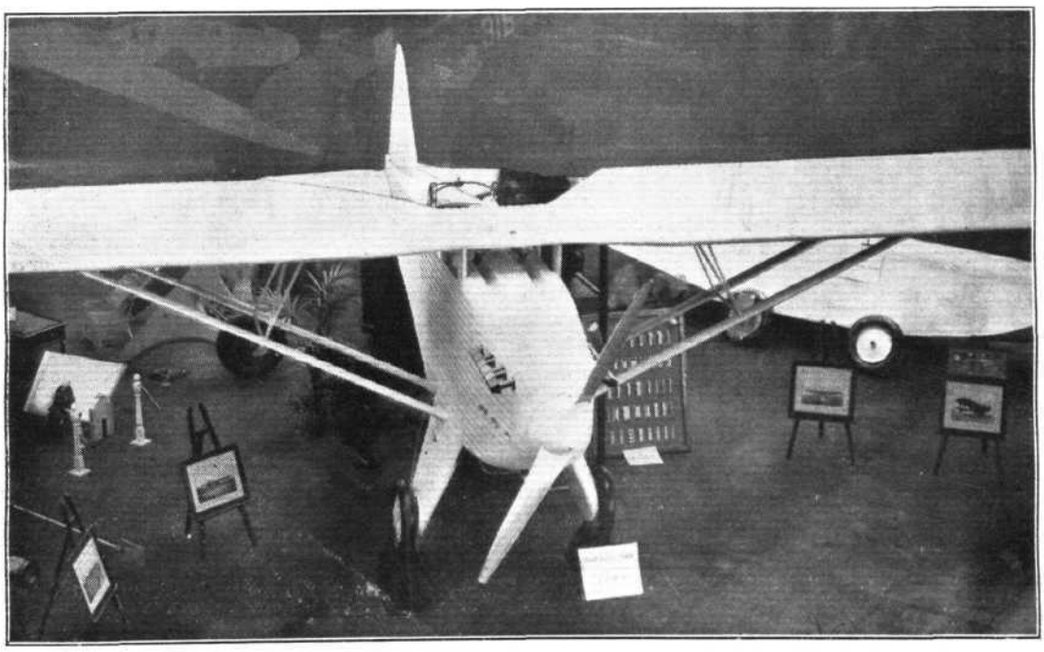


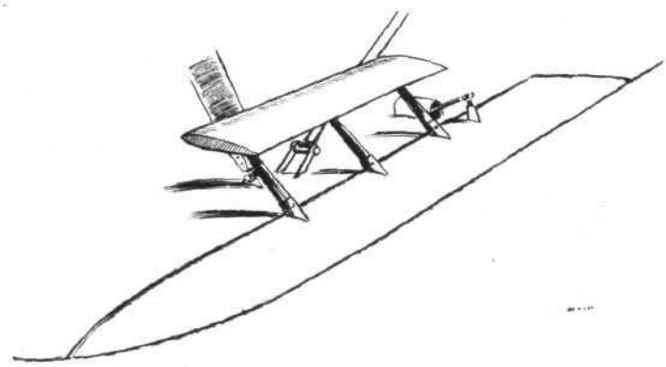
The Avimeta AVM 88 is built throughout of the light alloy Alferium, the product of the famous Creusot - Schneider firm.

["FLIGHT" *Photograph*

while the climb to 2,000 m. (6,560 ft.) is given as occupying only 5 min. 10 secs. As the machine has a total loaded weight of 1,534 kgs. (3,380 lbs.), the power loading is 14 lb./h.p. The wing loading is approximately 8·6 lb./sq. ft.

AVIMETA

THE parasol monoplane exhibited by the Avimeta Co., which is a subsidiary company of the famous Schneider-Creusot armament firm, is built throughout of the light alloy known as Alferium. It may be recollected that at the last Paris Aero Show two years ago, the Schneider firm exhibited a twin-engined twin fuselage machine of very unorthodox design, which was also built mainly of this material. In this year's machine, the A.V.M. 88, the metal has been employed in a slightly different manner, while the general design of the machine as an aeroplane follows that which seems to be becoming increasingly popular in France, *i.e.*, the parasol monoplane. That the machine is efficient aerodynamically appears probable, although it might be expected that the large cutout in the trailing edge above the fuselage may somewhat seriously affect the air flow and thus to some extent at any rate detract from what would doubtless be a very efficient monoplane wing. The wing bracing does not impress one as being any too good, and is of a type almost identical with that employed on the ill-fated Peyret monoplane on which Maneyrol was killed at Itford, with long lift struts sloping out at a fairly flat angle and steadied in their middle by shorter struts to the wing spars. On the other hand the main lift struts are certainly of ample cross section, so that possibly the wing structure is stronger in down loads than might at first be supposed.



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Small auxiliary surfaces mounted on cranks form the aileron balances on the Avia B.H. 26

The undercarriage is of the divided type in which each wheel

The Bernard 15 C.1 has semi-cantilever wing bracing and *sesquiplan* wing formation. Except for struts, &c., this machine is of all-wood construction

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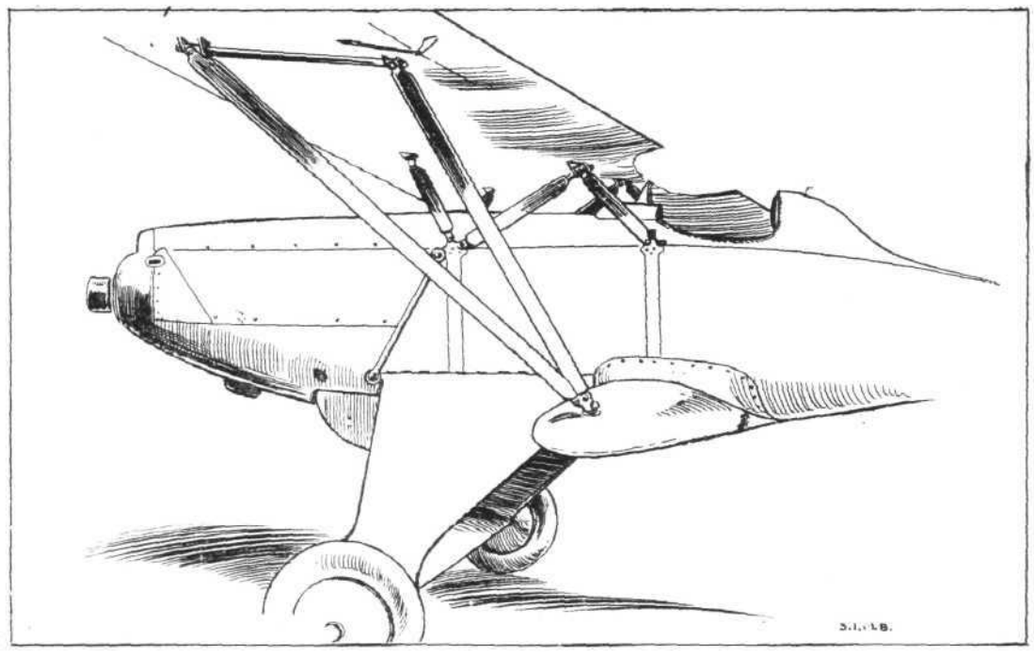

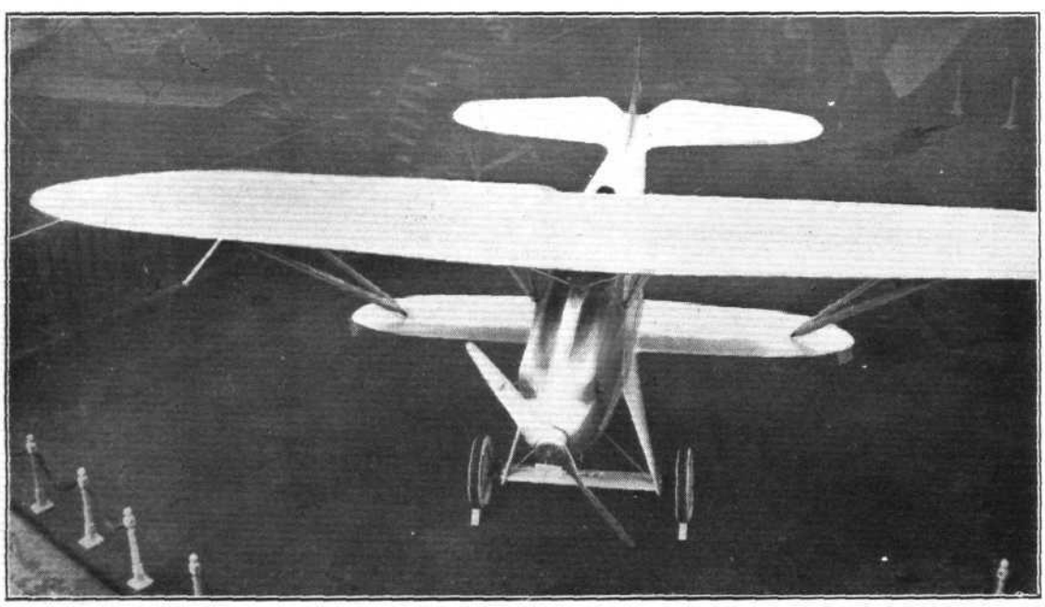

The Bernard (Ferbois) 15 C.1 somewhat resembles the Fokker machines in its lay-out. It is, however, of all-wood construction.

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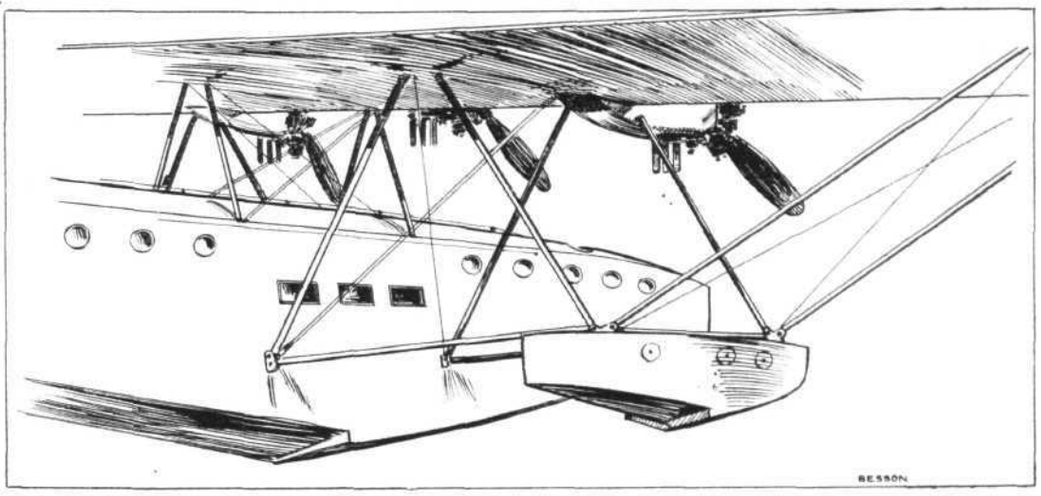

Three-quarter rear view of the Marcel Besson M.B.36. The machine is fitted with three "Jupiter" engines

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is carried independently of the other on a species of trouser leg. The metal covering of this machine is lightly corrugated at intervals of 4 in. or so, the radius of the corrugations being approximately a quarter of an inch, and the corrugations running in a fore and aft direction. According to British ideas the rudder appears distinctly small for a comparatively large machine, but should it be found to be inadequate it is of course a comparatively easy matter to remedy this defect, and the machine otherwise seems to have distinct possibilities as a high performance two-seater fighter.

BERNARD (FERBOIS)

THIS firm, one of whose machines holds the world's speed record, exhibits a very neat little single-seater fighter in which the designer has obviously been influenced by the Fokker biplanes, in that he has employed a large top plane and a very diminutive bottom plane, the two braced together by a pair of Vee struts on each side, but without any external wire bracing. The top plane is roughly of elliptical plan form, and the ailerons extend over the entire span with the exception of a very small cut-out in the centre immediately above the cockpit. The whole machine is very carefully streamlined and looks as if it should be very efficient aerodynamically. Constructionally the Bernard 15.C.1 differs from the Fokkers in that it is an all-wood structure both as regards wings and fuselage. The speed of this machine is given as 260 km./h. (161 m.p.h.) and in view of the careful streamlining and with a Hispano engine of 500 h.p. it seems likely that this performance is actually attained.

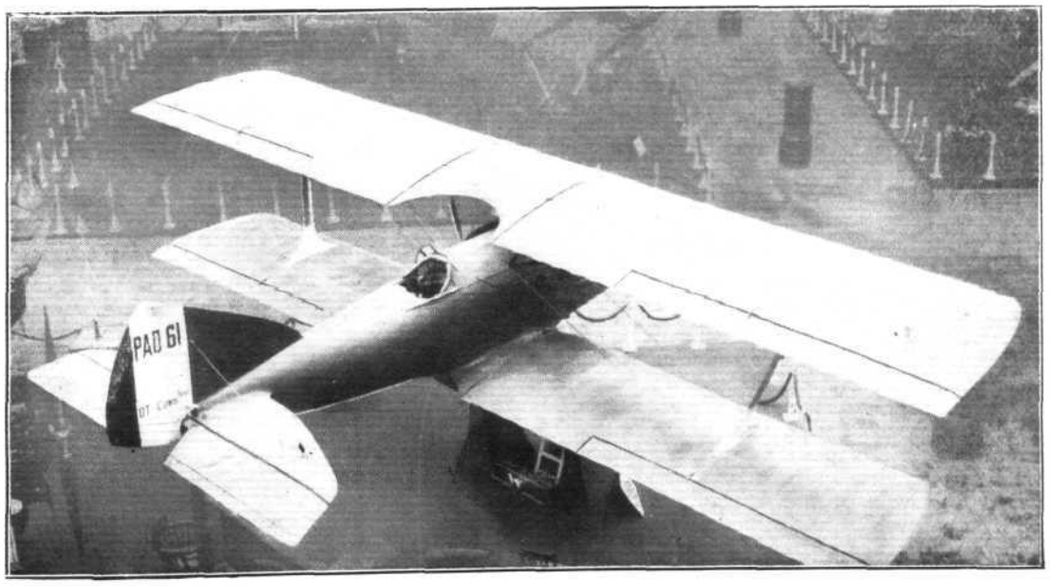
Whether inspired by the late arrival of the Armstrong Whitworth "Ajax" or through mere coincidence, one cannot say, but one morning several days after the opening of the Show, a new type of Bernard machine was suddenly discovered on this stand. This was a type 12.C.1 with Jupiter engine, and was of all-metal construction even to the covering, which was in general principle similar to the covering of an earlier single-seater shown by this firm at the 1924 Paris Show. This covering consists of sheet bent to channel sections, the flanges riveted internally to multiple spars. Certain changes were, however, to be noted in the way in which the width of these channels varied according to local requirements, doubtless with a view to facilitating construction. No particulars of this machine were available up to the time of our representatives' leaving the exhibition, but doubtless more will be heard of it in the future. Personally we prefer both the lines and the construction of the type 15.C.1.

MARCEL BESSON

ALMOST the only machine in the exhibition concerning which it was found difficult to obtain any detailed information was the large three-engined monoplane flying-boat exhibited by Marcel Besson. The machine has a very large flying-boat hull of rather pleasing lines, but the single step and straight Vee bottom is scarcely in keeping with the most modern British ideas on the subject of flying-boat design.

A placard on the stand announced that this machine, the type M.B.36, with three Gnôme-Rhône-Jupiter engines, has an area of 130 sq. m. (1,400 sq. ft.). The weight empty, but equipped, is given as 5,150 kg. (11,330 lbs.). The load carried is 2,850 kg. (6,275 lbs.), giving a total loaded weight of 8,000 kg. (17,600 lbs.). The commercial load is given as 1,350 kg. (3,000 lbs.) and the machine is said to have a range of 900 km. (560 miles). A top speed of 180 km./h. (112 m.p.h.) is claimed. The machine has accommodation for 14 passengers and there are two large luggage compartments.

The M.B.36 was exhibited with its wing uncovered, so that a certain amount of detail could be seen, although for some reason or other those in charge of the stand refused to have anything on the machine sketched in detail. The wing structure did not impress one as being any too strong. Altogether the wing structure gave one the impression that



The Bleriot-Spad 61 holds the world's altitude record with a height of 12,442m. (40,800 ft.).

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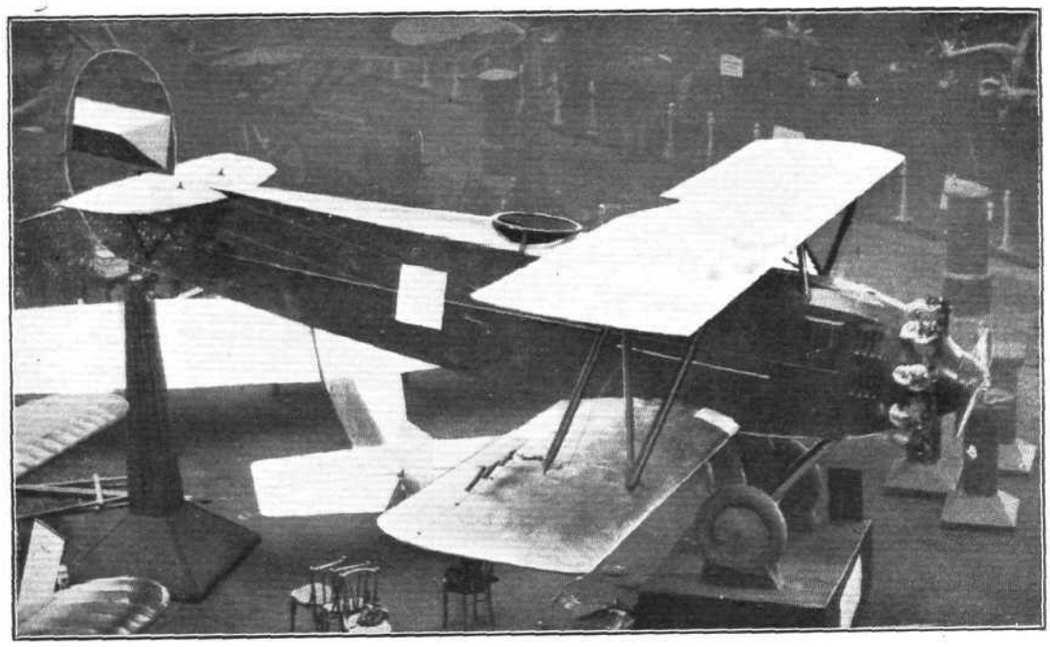


The Milos Bondy "Avia B.H. 26" is the first Czechoslovak two-seater fighter to be fitted with a "Jupiter" engine.

["FLIGHT" Photograph

it had originally been intended to build it in metal, but that at the last moment it became necessary to rush through a wooden wing. The mountings of the three Jupiter engines were in the form of very small girders of small diameter steel tubing, cross braced with piano wire and placed inside the wings. These mountings looked far from substantial, and it seems fairly certain that they will have to be re-designed before the machine becomes a practical proposition. With a slightly improved wing structure there does not, however, appear to be any reason why the M.B.36 should not be turned into quite a useful commercial seaplane.

Another Besson machine exhibited was a little low wing mono-seaplane designed to operate from a submarine. This machine, which was of quite normal design and construction, was shown on the French Navy stand adjoining the Besson stand.

BLERIOT AERONAUTIQUE

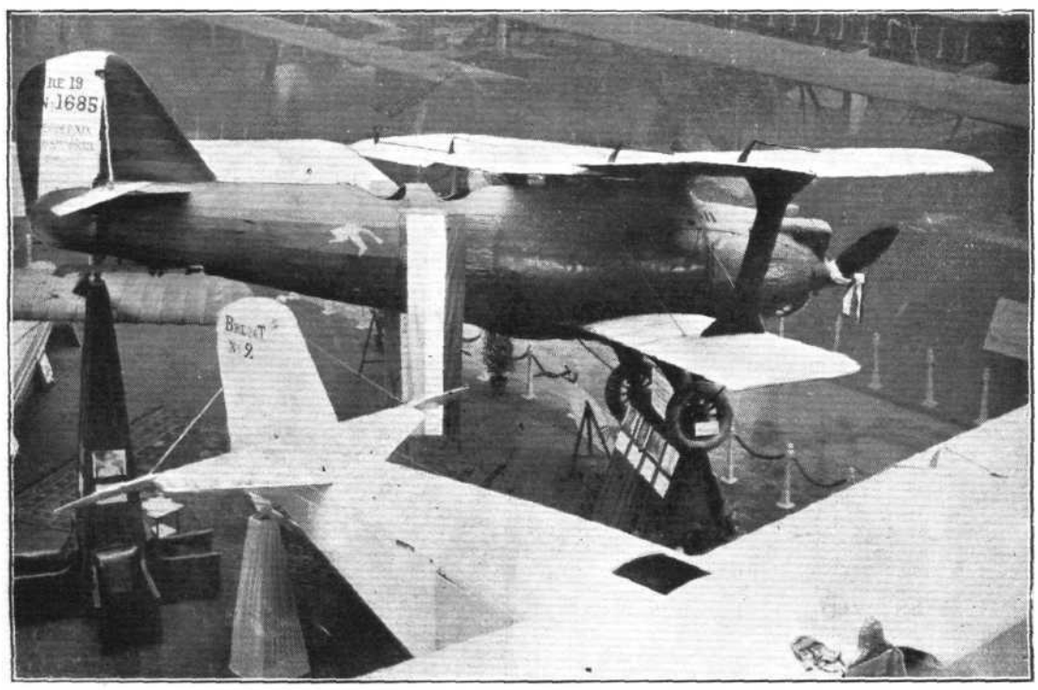
THE only complete machine exhibited by this famous French pioneer constructor was the Spad 61, which holds the world's altitude record. This machine is of orthodox Spad design and construction, and therefore calls for little comment. The speed claimed for it of 283 km./h. (176 m.p.h.) at 5,000 metres, seems somewhat optimistic, even allowing for the supercharged 450 h.p. Lorraine-Dietrich engine.

Of the new Bleriot 165 commercial aeroplane with two Jupiter engines, only the fuselage was exhibited. The cabin is planned on normal lines, and the most impressive feature of the machine is perhaps the very elaborate ventilating and heating arrangement, the mechanism of which was exposed under the floor of the fuselage, and to which special attention was called by placards on the stand.

The Bleriot form also exhibited several "noses" with Hispano and Jupiter engines, showing variable pitch air-screws of wood and metal.

MILOS BONDY A SPOL

OF the two machines exhibited by this Czechoslovak firm the Avia B.H.11 light 'plane two-seater is already well known, having been in existence for several years, and having a long list of victories in various competitions to its credit. Recently this type won the "Coppa d'Italia." The other Avia machine, the type B.H.26, is a two-seater fighter fitted with "Jupiter" engine. As far as we are aware, this is the first two-seater fighter of Czechoslovak design and construction to be fitted



The world's distance record holder: The Breguet 19, which flew from Paris to Djask, a distance of 5,400 km. (3,350 miles), in 32 hours, non-stop. In the foreground may be seen the rear portion of the Breguet 26T commercial aeroplane.

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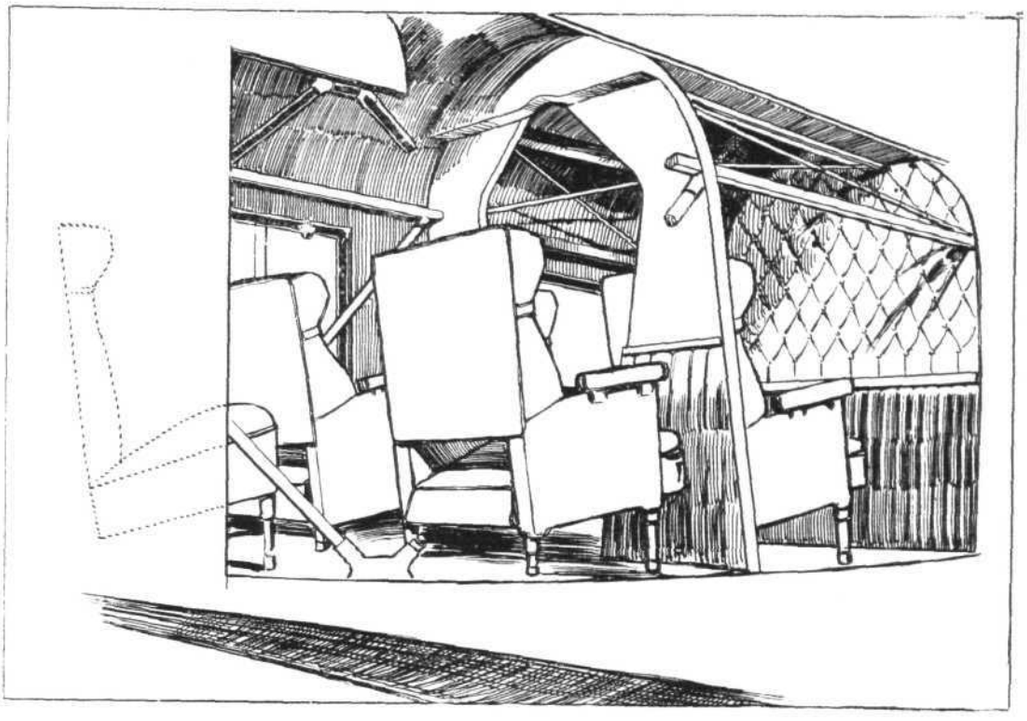
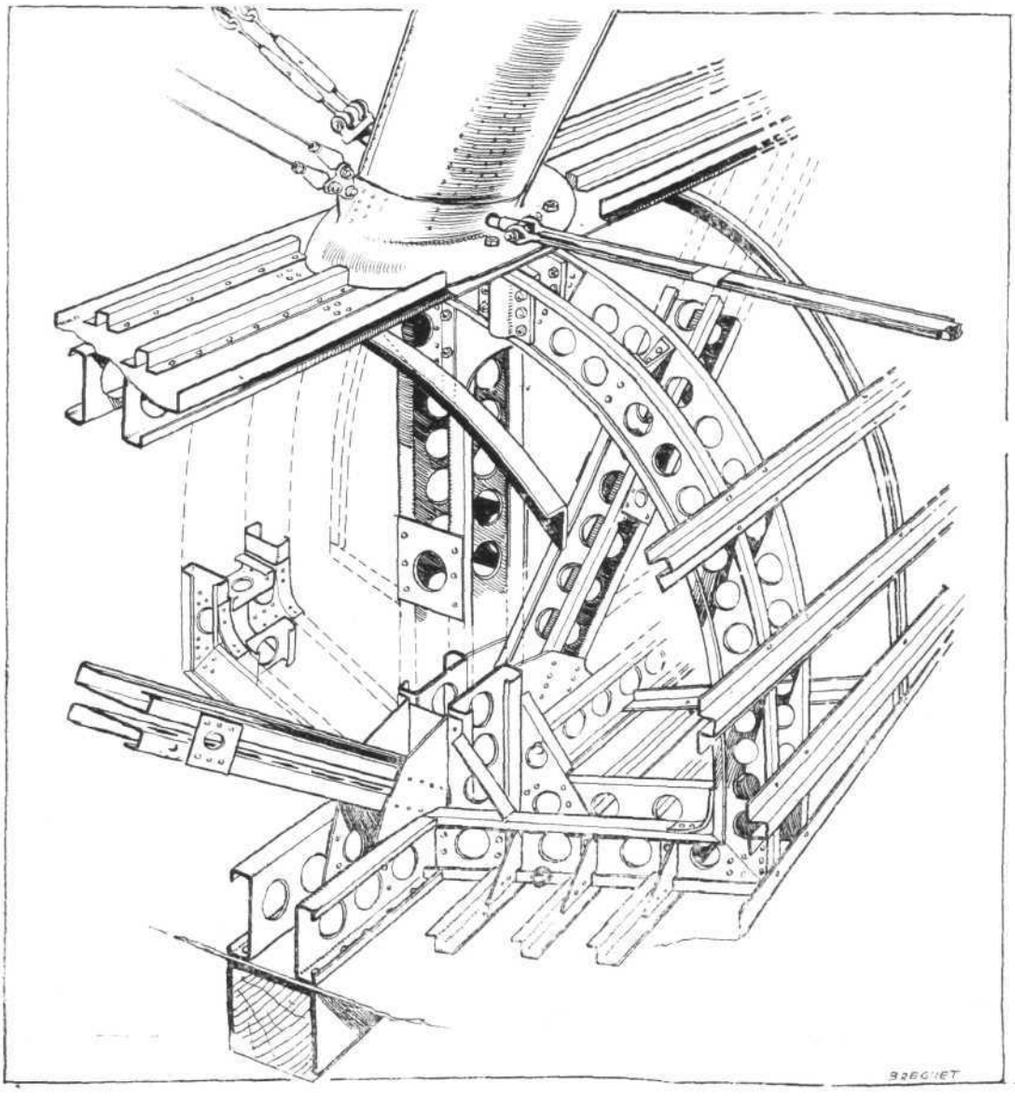


Sectioned view of the cabin of the Breguet commercial aeroplane



Breguet Float Construction: The Breguet 19 seaplane exhibited at Paris was fitted with all-metal single-step floats, similar as regards general lines to modern British seaplane floats. This sketch shows most of the constructional details, such as the type of keel used, the double formers, the fore and aft stringers, the diagonal bracing members, and the trough-section external stiffeners, which are placed outside the skin and riveted through. A feature of the floats is the wooden rubbing strake under the keel, evidently intended to protect the metal bottom against damage during beaching operations.

with this engine, and certainly Messrs. Benes and Hajns have produced a very business-like aeroplane. The B.H.26 is of perfectly standard Avia design, and there is little in the details of the construction which calls for comment. Now that the firm of Milos Bondy A Spol has been taken over by the famous Skoda works, presumably more capital will be available for development work, and the two clever and energetic designers of the firm may be relied upon to rise to the occasion and to produce machines which shall worthily uphold the excellent reputation which the firm in its smaller form has already established.

BREGUET

THERE can be no doubt that at the moment the Breguet firm dominates French aviation, and the famous long-distance flights carried out during the past year on Breguet machines give the firm some claim on a leading position within the French aircraft industry. One of the exhibits consisted of a Breguet XIX with 500 h.p. Hispano engine, which has been used in several of the long-distance non-stop flights of the year, and is claimed to have covered no less than 40,000 km.

The Breguet XIX can also be supplied as a seaplane, and ne such machine was exhibited fitted with Duralumin floats, one of which was shown in section so as to make an inspection of the construction possible. A fairly elaborate sketch of this float construction is given on p. 829, from which the main details will be clear. In the main this construction follows British practice, with the exception of the wooden keel, which is no doubt intended to protect the metal against scratches when the machine is being beached, and the external channel section stiffeners on the domed deck of the floats.

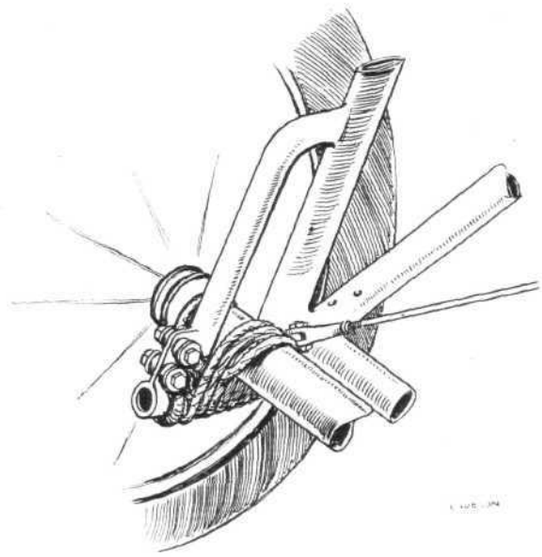
Most interesting of the Breguet exhibits was perhaps the new Breguet commercial aeroplane, the type XXVI T. This machine is of typical Breguet lines and the form of construction is similar to that made famous by the Type XIX. It is understood that the XXVI T. is only regarded as an experimental type, and that it will be replaced by a later model, the XXVIII T., which will have a slightly larger wing area and will carry eight passengers instead of the six for which accommodation is provided in the XXVI T. The tail plane of the XXVI T. looks somewhat inadequate in size, and it would seem likely that in the XXVIII T. a tail of considerably greater area will have to be fitted. The machine is so typically Breguet in its details that no further reference is required. A sketch, with the cabin wall removed, shows the arrangement of the passenger accommodation.

CAUDRON

IN our preliminary show report of December 2 it was stated that the famous French pioneer aircraft firm of Caudron would exhibit but one machine, the C.104. This machine is actually shown, and is a two-seater long-distance, reconnaissance machine of typical Caudron lines and simple mixed wood and metal construction of the type which Caudron has produced since the comparatively early days of flying. The machine, data relating to which have already been published, does not call for any comment. In addition to the more powerful machine, Caudron exhibited two school machines and the little parasol monoplane, type C.109, which did so well at Vauville last year, piloted by Van Laere, and also at Brussels. All these machines, however, are already well known to our readers, and it will suffice if we record here their presence at the show.

DESCAMPS

WE have been asked to correct certain statements made in our preliminary show report concerning the little two-seater fighter exhibited by the *Société des Avions Descamps*. Thus,

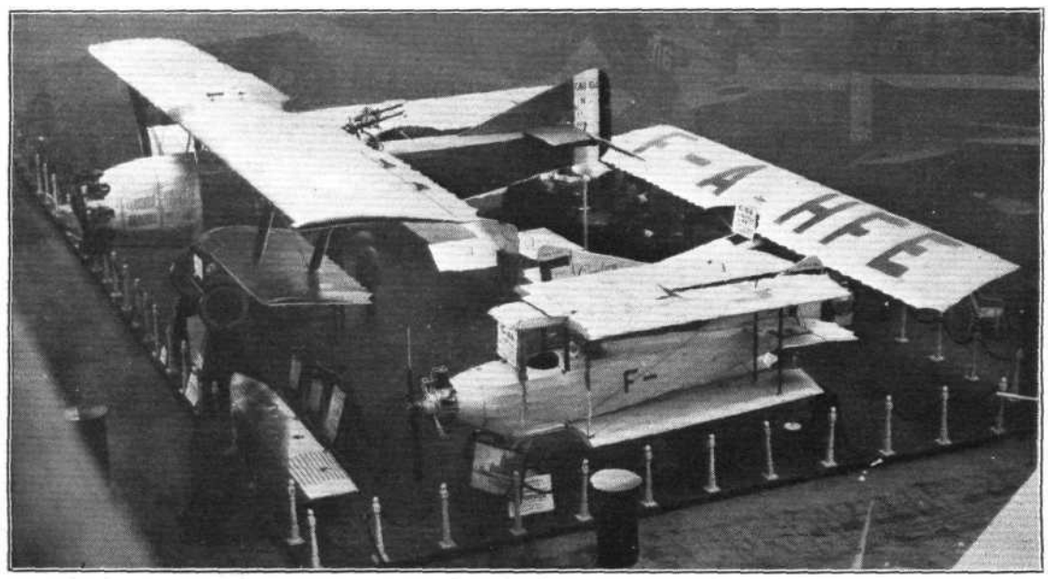


["FLIGHT" *Copyright*

The slot for the undercarriage axle is formed by a short welded-on tube on the Caudron C. 109 parasol monoplane two-seater light 'plane.

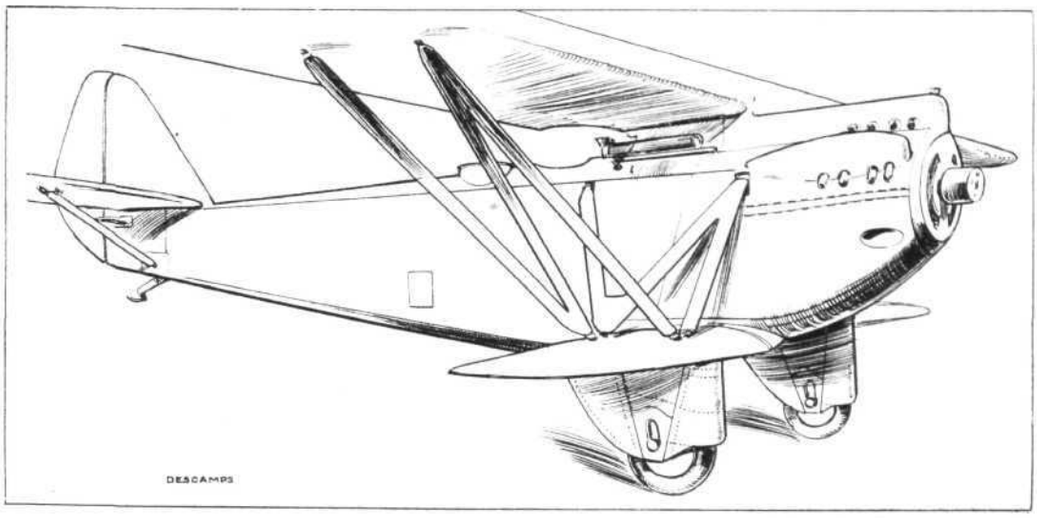
it was stated that the machine is of all-metal construction, whereas in point of fact the wing and fuselage covering are of fabric. The performance figures given by our correspondent are also claimed to be incorrect in that they under-estimate the actual figures. Thus the top speed near the ground is claimed to be 230 km./hr. (142·5 m.p.h.), while the climb to 5,000 m. occupied 24 mins. 53 secs., the speed at 5,000 m. being 196·5 km./hr. (122 m.p.h.).

The Descamps type 17 A.2 is in the same class as the Breguet 19 and Potez 25, and it is claimed that it has a better performance. In its design simplicity of construction has been the feature aimed at, and certainly the Duralumin tube fuselage is about as simple as anything we have seen. The claim that it is not only quick and cheap to build, but also



The Caudron Stand: The large machine is the C.104, two-seater fighter, while the smaller types include training machines and a light monoplane two-seater, the C.109.

["FLIGHT" *Photograph*



The Descamps 17 A 2 is a two-seater fighter of very simple construction. The wheels are attached in their fairings somewhat after the style of a bicycle wheel. Rigid bracing is a feature of this machine.

["FLIGHT" *Copyright*

easy to repair in the field, appears well founded. Concerning the wing construction nothing could be gathered, although we have been promised some illustrations showing details. These we hope to publish at a later date. A feature of the machine is that no wire bracing is employed anywhere, so that the machine is regarded as being indeformable, and thus to require a minimum of keeping in flying trim in actual service.

DYLE ET BACALAN

OF the D.B.10 only the nose and centre portion was exhibited. The machine is of all-metal construction, of a type which looks somewhat heavy In order to illustrate the fitting of different engines, the portion of a machine exhibited had a water-cooled engine on one side and a radial "Jupiter" on the other, an arrangement that may possibly have puzzled the less sophisticated visitors to the show.

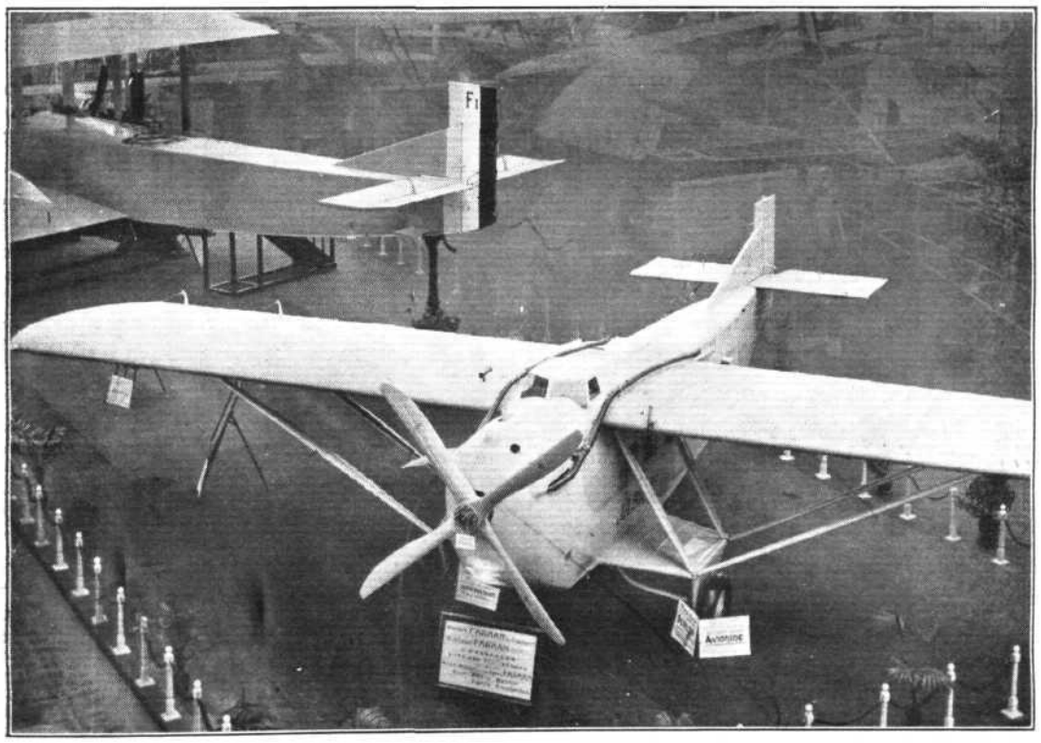
H. & M. FARMAN

Two large machines formed the exhibits on the Farman stand this year, one of which was the new Farman commercial monoplane, type 170T, and the other a large night bomber, type 160 B.N., of which only the fuselage and centre portion were shown. This latter machine impressed one mainly on account of the very excellent lay-out of its crew accommodation, which had obviously been very carefully studied and was a pattern of what a machine of this class should be from the point of view of those who have to serve in it. The bombs, armament, instruments, etc., were admirably placed, and in spite of a very extensive equipment of every sort, there was everywhere ample room to move about. An unusual feature of the bomber is the small tail trimming plane, which enables a fixed main tail plane to be used.

The commercial monoplane, which, owing to its low position over the ground, has been nicknamed "Ventre-a-Terre," is a development of the "Jabiru," and is a much more likeable machine altogether, although the rectangular wing with square tips is not exactly calculated to enhance the appearance. The pilot is, as the accompanying photograph will show, situated right above and ahead of the wing, and has a sort of miniature conning tower protecting him against the wind. In fact, the machine might almost be described as being of the *conduite intérieure* type.

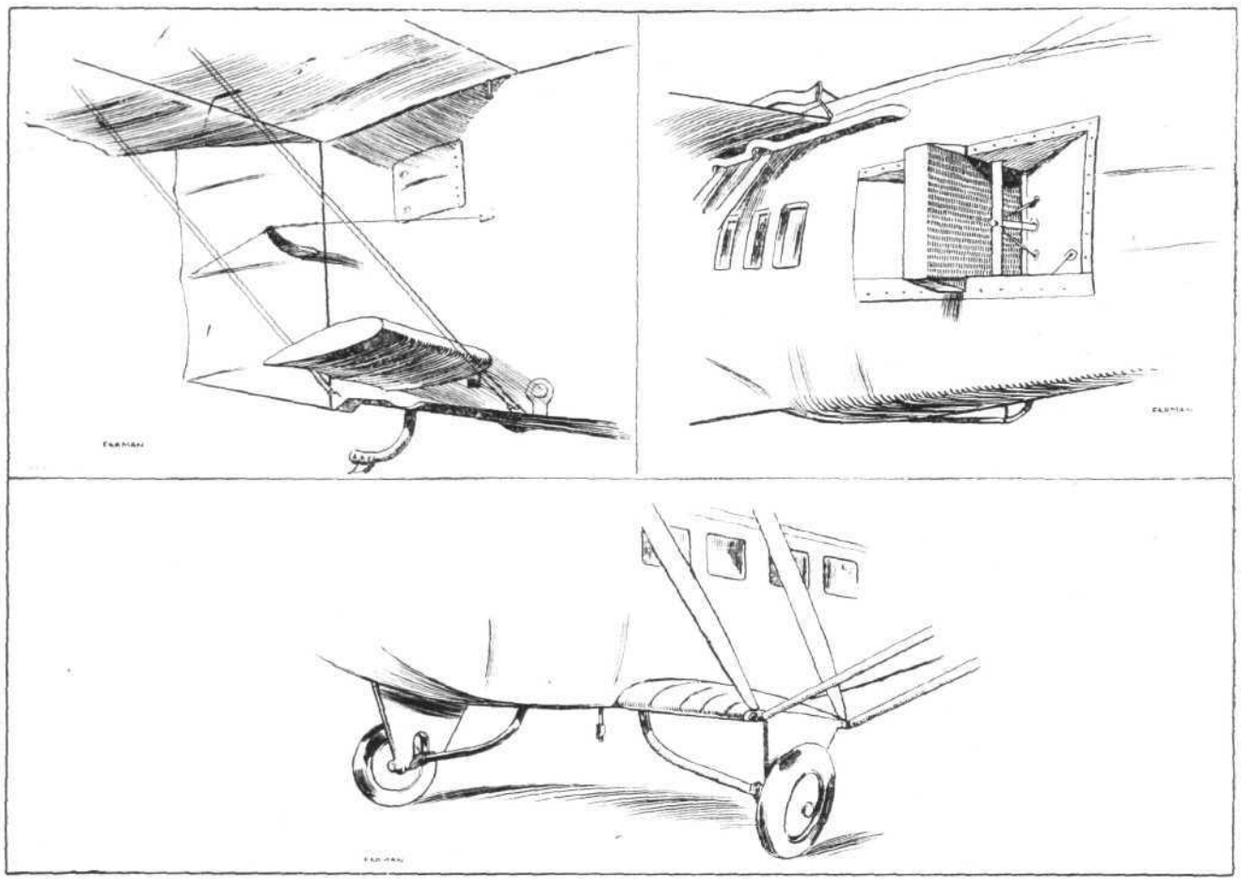
The passenger accommodation (for eight passengers) is comfortable, and the heating of the cabin is by hot water from the radiators, which are very unusually placed projecing through the sides of the fuselage halfway back to the tail. This feature is illustrated by a sketch. Two long exhaust pipes running over the top of the wing carry the gases well away, and probably the cabin is almost free from noise.

The engine fitted in the Farman 170T is a 500 h.p. Farman and drives a four-bladed propeller. Owing to the removal of the radiators aft, a very "clean" nose has been made possible.



The "Ventre-a-Terre": An unconventional view of the Farman commercial monoplane with 500 h.p. Farman engine.

["FLIGHT" *Photograph*



["FLIGHT" *Copyright*

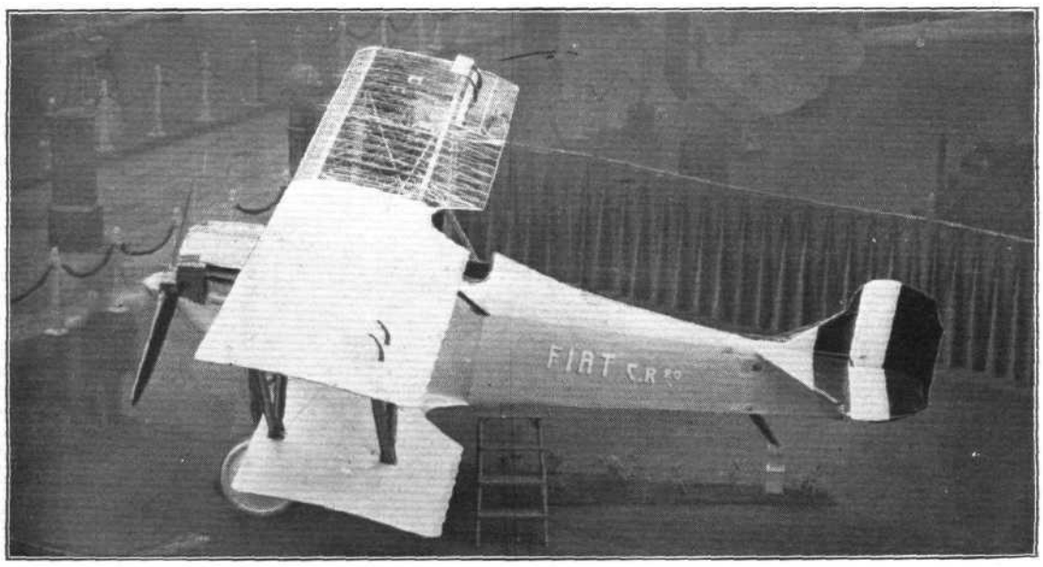
Some Farman details: The upper left-hand sketch shows the separate tail trimming plane. The use of this enables the main tail plane to be rigidly attached. On the right the unusual placing and mounting of one of the radiators on the Farman commercial monoplane. The cabin is heated by hot water from the radiator. Below, the undercarriage of the "Ventre-a-Terre"

FIAT

THROUGH a misunderstanding the Fiat single-seater fighter was not included in our advance report of December 2 dealing with the machines exhibited at Paris. It is, therefore, intended to describe it at rather more detail than we have been able to devote to the majority of machines in the present issue.

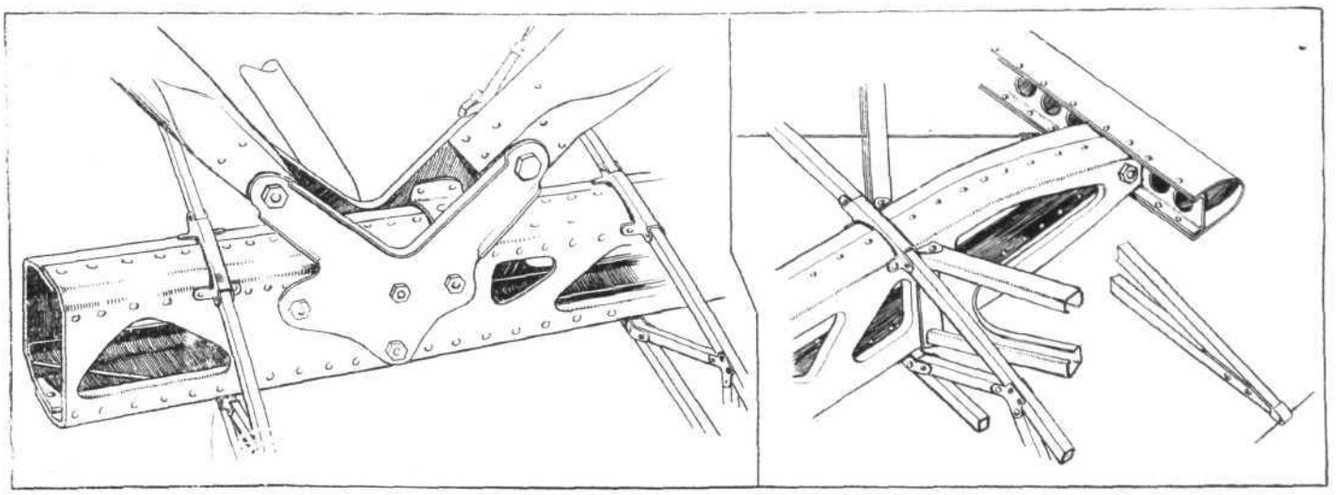
The Fiat type C.R.20, with 410 h.p. Fiat A-20 engine, is a single-seater fighter of all-metal construction. In its general lines it is of orthodox design, with the possible exception of the somewhat unusual nose radiator (shaped to conform roughly to the V of the engine cylinder banks), and the wing bracing, which is in the form of a Warren truss, no wires at all being employed. One of our photographs this week illustrates the general appearance of the machine. The Fiat, incidentally, was exhibited in what is probably the best manner possible, *i.e.*, one side stripped to the centre line and the other side covered. This is probably a fairly expensive way of preparing a machine for exhibition, but it is undoubtedly a very excellent one. From one side all the detail construction can be inspected, while from the other one may form an idea of the "lines" of the machine. It may be recollected that during the war it was the custom at the Agricultural Hall, Islington, where captured enemy aircraft were exhibited, to strip the machines to the centre line in this fashion.

The construction of the Fiat C.R.20 is of considerable interest, since the form chosen obviously represents an attempt at simplicity coupled with the use of an all-metal structure.



The Fiat C.R.20 is an all-metal single-seater fighter. It was exhibited stripped to the centre line, so that from one side one could see the construction and from the other the "lines" of the machine.

["FLIGHT" *Photograph*



["FLIGHT" *Copyright*

SOME FIAT CONSTRUCTIONAL DETAILS: On the left, the built-up steel spar. The main section is indicated where spar is shown cut through. Local reinforcement, in the form of internal angle plates, is used at points of interplane strut attachments. The ribs (of Duralumin) are square-section tubes, secured to the spars as shown. On the right, details of wing-tip construction, etc.

The wings have built-up steel spars, each spar being in two halves, and the overlaps of these halves riveted on the top and bottom centre lines of the spar. The construction, which is probably reasonably cheap, is illustrated by one of our sketches. It would appear doubtful whether with the shallow curvature of the top and bottom spar faces the full strength of the material can be developed before the spar buckles in compression. As a production job, however, there is much to be said for the Fiat spar. The wing ribs are built up from square-section tubes.

The fuselage is of tubular construction as regards its main members, steel being the material used. The secondary structure, however, which is of duralumin, appears to be so intermixed with the main structure that it is difficult to say where one ends and the other begins. The result is that curved formers supporting longitudinal stringers are used at the same time as steadying struts in the fuselage structure. The utility as a strut of a member that is thus initially curved may be questioned. The "bays" in the fuselage are very long (the struts are triangulated in the form of a Warren girder), and the bent formers meet the longerons midway between main strut attachments.

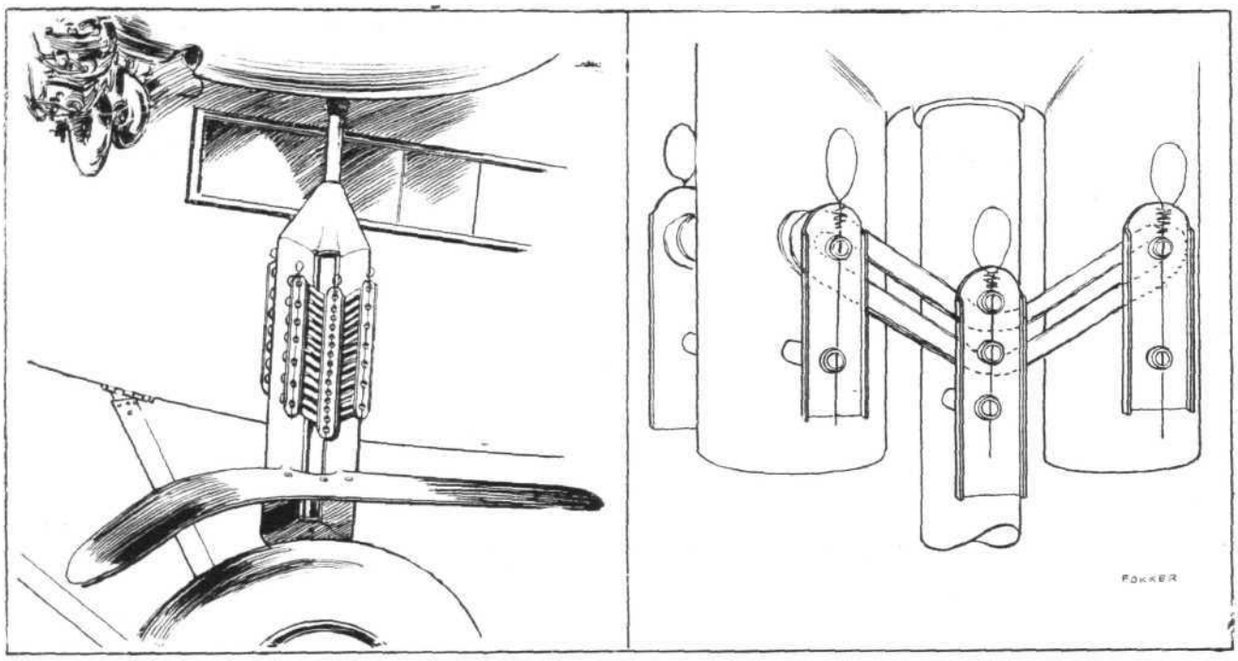
Following is a brief specification of the Fiat C.R.20:—Length o.a., 6·7 m. (22 ft.); span, 9·8 m. (32 ft 2 ins.); wing area, 25·85 sq. m. (278 sq. ft.); weight of machine empty, 940 kg. (2,070 lbs.); petrol, oil, crew, and military equipment, 420 kg. (925 lbs.). Total loaded weight, 1,360 kg. (3,000 lb.); wing loading, 52·5 kg./sq. m. (10·8 lb./sq. ft.); power loading, 3·24 kg./h.p. (7·13 lb./h.p.); "wing power," 15·8 h.p./sq. m. (1·5 h.p./sq. ft.); theoretical ceiling, 9,000 m. (29,500 ft.).; service ceiling, 8,500 m. (27,900 ft.); endurance, 2½ hours at full throttle; speed at ground level, 276 km./hr. (171 m.p.h.); speed at 3,000 m. (9,850 ft.), 264 km./hr. (164 m.p.h.); speed at 6,000 m. (19,700 ft.), 240 km./hr. (149 m.p.h.); climb to 3,000 m. in 6 mins. 41 secs.; to 6,000 m. in 16 mins. 58 secs.

FOKKER

AMONG their other distinctions the two machines exhibited on the Fokker stand had that of being the only machines to have arrived from their home stations by air, both flying to le Bourget and there dismantled for transport to the Grand Palais. Of the two the C.VD was borrowed at the last moment from the Dutch air service, where it had been in use for a considerable period, and had already done more than 160 hours' flying when it arrived at le Bourget. One would certainly never suspect this from the appearance of the machine which, apar from a few places on cockpit

The Fokker Stand: On the extreme left a "nose" with "Jupiter" engine. Then a C.V.D. with Hispano engine and, on the right, the F.VII 3M with three Siddeley "Lynx" engines.

["FLIGHT" *Photograph*

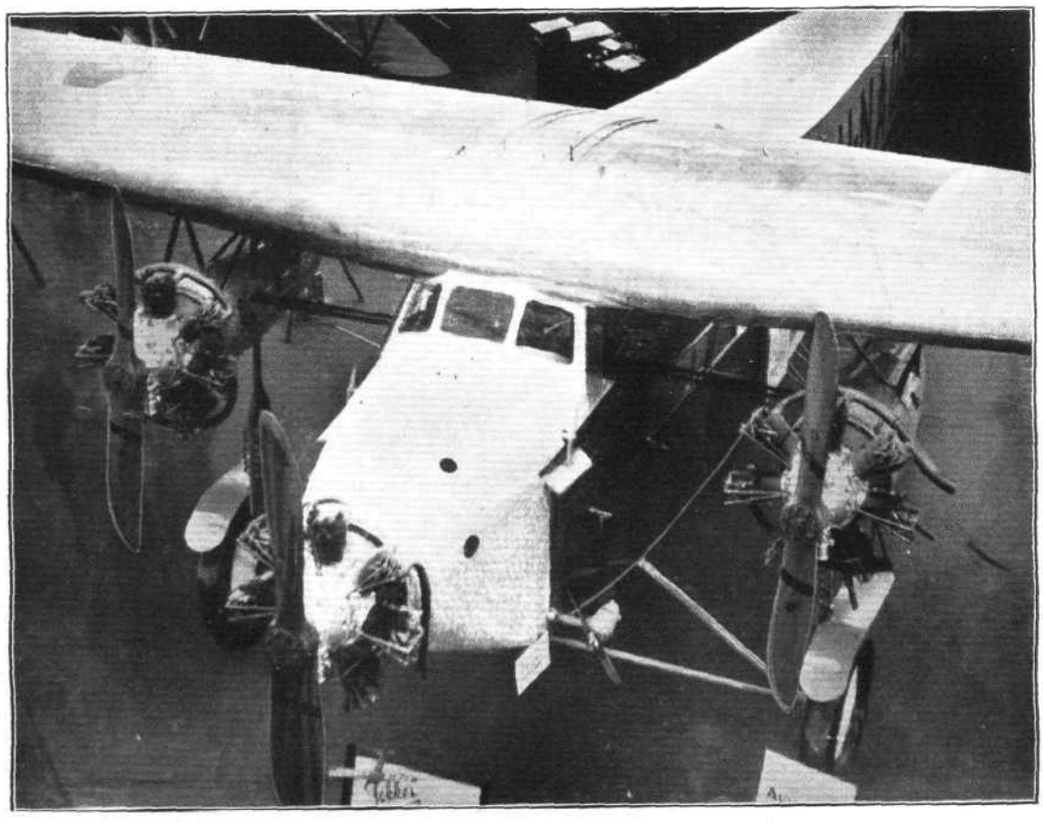


The undercarriage of the Fokker F. VII-3m is unusual. A feature is that individual rubber rings can be changed without disturbing the others. Also the number of rings can be proportioned according to the load which the machine is carrying.

coamings, etc., where the paint had been rubbed off by the crew getting in and out, looks as good as new. Thus, it would seem that the Fokker machines are not only relatively cheap in first cost but are also able to stand up to hard wear—two qualities which do not always go hand in hand. The C.V. is already well known to our readers, and no detail reference seems to be required.

The Fokker F.VII-3m commercial monoplane was seen by many at Paris for the first time, although the type has been used fairly extensively on air line work. The particular specimen exhibited was stated to have been sold to the famous financier Loewenstein for addition to his "stable," which already includes quite a number of different types. The machine is of typical Fokker construction, with welded fuselage and wood wing. The manner of mounting and cowling the wing engines is rather neat, and a feature which is of special interest is the undercarriage which, in point of fact, is not new, having been fitted on the single-engined Fokker monoplanes for a long time. Probably the first time it was seen in England was on the occasion of the anti-stall demonstration by Fokker at Croydon, the machine used for this demonstration having an undercarriage of this type.

The telescopic members of this undercarriage are of welded-up steel tubes (a feature to which some might object, although



This view from above gives a good idea of the power plant arrangement, pilot's cockpit, &c., of the Fokker F.VII-3m.

the undercarriage seems to stand up to its work in practice) and the shock-absorbing medium is in the form of rubber rings of standard size. One of our sketches illustrates the arrangement. It will be seen that individual rings may be removed without interfering with the others. Not only so, but if the machine is to be used with a very light load only (as might sometimes happen) a number of rings can be removed so as to obtain just the right amount of springing. Conversely if the machine is to be used with extra heavy loads, additional rings may be slipped into place. Thus not only can the springing be directly proportioned to the load, but from the point of view of maintenance the undercarriage is about as simple as anything could be.

On the Fokker stand was also exhibited a C.V. "nose" with "Jupiter" engine, demonstrating a special feature of all Fokker machines: that of having easily interchangeable engine units to suit various requirements. Altogether the Fokker stand was one worth a visit, and the fact that Mijnheer Stephan seems able to speak, in addition to his native tongue, French, German, English, Czech, and goodness knows how many other languages fluently, enabled visitors of all nationalities to obtain reliable information with a minimum of trouble. At a show like the Paris exhibition this is a point of no small importance, and is one which it might be well to learn from on this side of the Channel also.

(To be concluded.)

AIRISMS FROM THE FOUR WINDS

Swiss Flight to Africa

LIEUT. MITTELHOLZER, the Swiss pilot, set out from Zurich on December 7, *en route* for Africa, in connection with the scientific expedition to that country, which has already been referred to in FLIGHT. He was flying a Dornier "Mercury" seaplane fitted with a 450-h.p. B.M.W. engine, and was accompanied by M. René Gouzy (geographer and journalist), Dr. Arnold Heim (geologist), and a pilot-mechanic. The object of the expedition is to obtain a photographic record of various sections along the route to Cape Town—which will lie via Cairo, the Nile, Kenya, Belgian Congo, the Zambesi, Beira, Laurenco, Port Natal, and Port Elizabeth—and to study animal life and geological problems, etc. The whole trip is expected to last about three months.

A Flying Club for South Africa

A FLYING Club—the first in South Africa—has been formed at Johannesburg. It will be known as the Johannesburg Light Aeroplane Club.

Flight to Brazil Abandoned

SEN. BARROS, the Brazilian pilot who has been engaged in an attempt to fly from Genoa to Brazil in a Savoia S.55 flying-boat, has, it is reported, decided to abandon the attempt. He reached Praia, Cape Verde Is., on November 11.

A Spanish-African Flight

THE Spanish Atlantic Squadron, consisting of three Dornier-Wal flying boats fitted with Rolls-Royce engines, and under the command of Maj. Rafael Llorente, left Melilla at 8 a.m. on December 10 on the first stage of a flight to Fernando Po, on the west coast of Africa. The pilots of the second and third machines are Capts. Antonio Llorente and Ignacio Jimenez; each machine carries, in addition, two other officers and one mechanic. All three machines reached Casablanca shortly after noon (on December 10). The route to be followed on this flight will be Las Palmas, Port Etienne, Dakar, Konakri, Monrovia, Grand Bassam, Lagos, and St. Isabel Bay. They reached Las Palmas on December 12.

The "Moth's" Eastern Tour

As reported on p. 835 of this issue, in the Lancashire Aero Club's report, Capt. Stack and Mr. Leete successfully accomplished the 200-mile sea crossing from Malta to Homs (or Khoms), Tripoli. From Badir they flew along the coast, and eventually reached Heliopolis (Cairo) on December 12. They left Cairo next day *en route* for Baghdad.

African Air Service Mishap

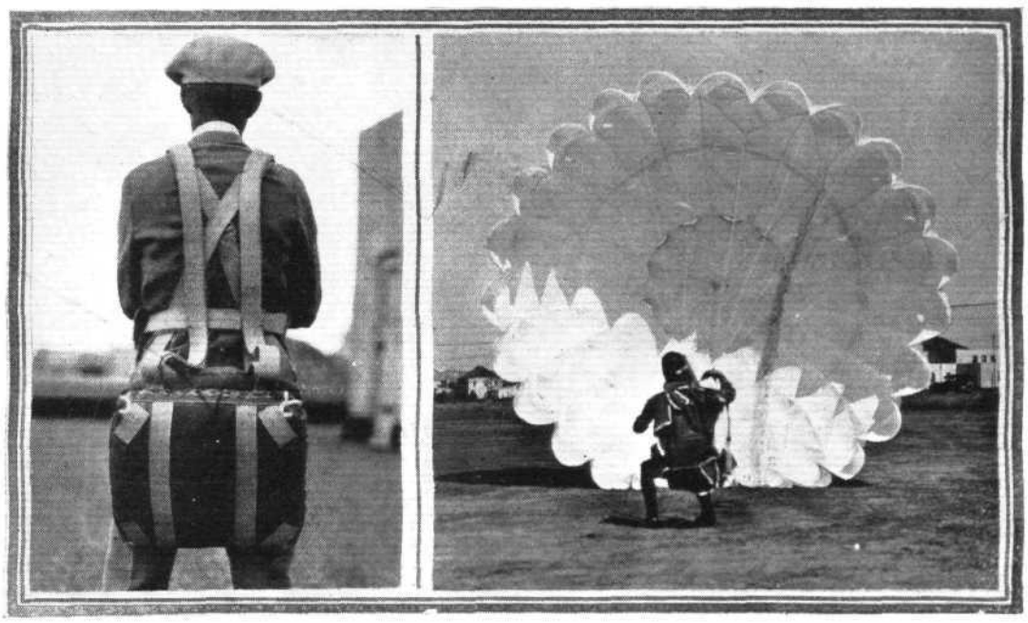
ONE of the French air liners on the Toulon-Casablanca air route had to make a forced landing on the beach, near Nerja, Malaga, on December 7. The machine caught fire, and the pilot and one of the passengers were injured.

Capt. Udet in Paris

CAPT. UDET, who is well-known to readers of FLIGHT, in connection with the small aeroplanes bearing his name, delivered an address to French airmen in Paris, on December 13. His subject was "Tendencies of German Aviation," illustrated by cine-films of his own flights.

Italian Air Services to Link Up British Route to the East

SIG. E. BOGGIANO-PICO, the representative of the Italian Aero Lloyd Air Transport Company, has arrived in this country in order to place before the Air Ministry and Imperial Airways, Ltd., plans for regular air services between Zurich and Egypt, via Italy and Greece. Should these materialise the present London-Zurich and the forthcoming Cairo-Karachi air routes would be linked up.



A New American Parachute: Two views of the Russell Automatic Parachute, which has been giving satisfactory results in America. With a dead load of 180 lbs. a 24 ft. diameter 'chute opens in 1½ secs., and descends at the rate of 22 ft. per sec.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

COMMITTEE MEETING

A MEETING of the Committee was held on Wednesday, December 8, 1926, when there were present: Brig.-Gen. Lord Thomson, C.B.E., D.S.O., in the chair: Mr. Ernest C. Bucknall; Lieut.-Col. M. O. Darby; Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S.; Mr. E. J. B. How; Wing-Comdr. T. O'B. Hubbard, M.C., A.F.C.; Col. F. Lindsay Lloyd, C.M.G., C.B.E.; Lieut.-Col. Sir Francis K. McClean, A.F.C.; Lieut.-Col. M. O'Gorman, C.B.; Mr. T. O. M. Sopwith, C.B.E.; and the Secretary.

Election of Members.—The following new Members were elected:—

Group-Capt. Edward Featherstone Briggs.
Robert Arthur Chalmers.
Frederick Scott Clark.
Lord Ossulston.
Henry George Simms.

Aviators' Certificates.—The following Aviators' certificates were granted:—

8053.	Oliver Edwin Simmonds ..	November 28, 1926.
8054.	Edmund Kell Blyth	November 30, 1926.
8055.	Thomas Herbert Ottewill Richardson	October 18, 1926.
8056.	George Watson	December 4, 1926.

F.A.I. Paris Conference.—The Committee considered the following questions to be discussed at the Paris Conference on December 16 and 17, 1926:—Special classification of records for women pilots; height records; high-speed records; valuation of aircraft for custom purposes; classification of aircraft for records; Schneider Cup regulations.

The following delegates were appointed to represent the Club: Lieut.-Col. M. O'Gorman, C.B., Capt. C. B. Wilson, M.C., and H. E. Perrin.

Association of Aero Clubs.—The scheme for the formation of a General Committee of Aero Clubs in Great Britain was considered and approved for submission to the various Aero clubs.

London Aeroplane Club.—The report of the year's working and accounts were submitted. The Committee considered the results achieved were most satisfactory, and a unanimous vote of thanks was passed to the committee and staff of the London Aeroplane Club.

House Committee

A meeting of the House Committee was held on Monday, December 6, 1926, when there were present: Mr. Ernest C. Bucknall, in the chair; Maj. Herbert J. Corin, Mr. E. J. B. How, Mr. D. C. MacLachlan, and the Secretary.

Christmas Closing.—It was decided that on Christmas Day, Sunday and Boxing Day, December 25, 26 and 27, 1926, luncheons, dinners, and teas should not be served and the bar be closed, breakfasts only being served to members staying in the club.

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary.

LIGHT 'PLANE CLUB DOINGS

London Aeroplane Club

DURING the past week, the fog was responsible for three blank days. The total flying time was 21 hrs. 20 mins.

The following Members had flying instruction:—D. L. Stally, A. J. Richardson, H. S. Spooner, H. Solomon, J. A. Simson, J. G. Crammond, E. A. Lingard, J. J. Hofer, Miss Spooner, R. Malcolm, C. G. Miesagaes, G. C. Bonner, M. H. Samuelson, E. J. B. King, Miss Fletcher.

The following members made solo flights:—D. P. Esler, O. J. Tapper, H. S. Spooner, J. A. R. Stevenson, G. C. Bonner, D. Kittel, G. Terrell, N. Jones, Lady Bailey, W. L. Macleod, W. Hay, G. H. Craig, S. O. Bradshaw, C. E. Murrell.

During the week W. L. Macleod and H. Spooner passed the tests for their Aviators' Certificates.

The following members were given joy rides:—Mrs. Matthews, E.R.Wilson, Miss Wilson.

The Club has arranged to take over a D.H. "Moth" to replace G-EBNP, which was recently crashed.

Lancashire Aero Club

REPORT for week ending December 11.—Total flying time for the week, 12 hrs. 50 mins., made up as follows:—Dual with Mr. Brown:—Messrs. Wade 1 hr. 5 mins., Dickinson 1 hr., Twemlow 45 mins., Stern 40 mins., Miss Brown 45 mins.; Messrs. Wilson and McNair 35 mins. each, Shiers 30 mins., Parker 25 mins.; Miss Emery 25 mins.; Messrs. Slater and Newton 20 mins. each; Moore and Prince 10 mins. each; Costa 15 mins.

Solo:—Messrs. Twemlow 1 hr. 15 mins., Lacayo 50 mins., Leeming 40 mins., Costa 35 mins., Goodfellow 15 mins. Test flights:—1 hr. 15 mins.

The nature of the weather may be gathered from the fact that not a single joy-ride has been given during the week. Incidentally, the said atmospheric conditions have lost the club £10, for Mr. Blagden, who has been waiting patiently for 10 days for a gap in the clouds to enable him to do his "A" Licence height test, has now left the Manchester district without being able to carry it out.

The following extract from a letter written by Mr. Stack at Malta may be of general interest:—". . . we have managed to find Malta after leaping off Sicily into space, so to speak. We have had the most unfortunate weather—rain, gales, thunder and mist down the Rhone valley—anything, in fact, but a following wind and fine days. We have been held up everywhere, but are slowly pushing on. The two best trips we have made so far have been from Marseilles to Pisa, 300 miles in 4½ hrs., and then from Capua (Naples) to Malta, 470 miles in 6½ hrs. Our next leap off will be to cross the spot of neat water to the African coast. We had rather a rough trip from Paris to Lyons. When we left Paris the weather was not too bad, but a strong head wind was blowing, and by the time we reached Dijon we were flying through rain and thunderstorms. The wind got up to nearly half a gale and we had to fly at about 300 ft. in order to follow the river. Eventually, when about 60 kms. from Lyons, it became so dark that we could not see our maps, and had to just follow the river. After a time the lights of Lyons showed up, but we could not see anything in the nature of aerodrome lights. Luckily I knew the position of the aerodrome and managed to find it, but could only make out the roofs of the hangars and a large white landing T. We made landings of sorts, and then got out and walked to the hangars, as it was too dangerous to taxi our kites in owing to the darkness. The staff rushed out in cars and said they thought we would have crashed, and explained that they had no lights, as all their electric cables had been blown down by the storm of the day before." (Apparently the aerodrome manager forgot that there are such things as petrol flares!) Since writing the foregoing, both Stack and Leete have safely crossed the 250-mile "spot of neat water" referred to, and have reached Cairo, after covering well over 2,000 miles from their starting point, the last 1,000 miles having taken them only four days.

Meanwhile, all (except the weather, of course) is in readiness for Mr. Leeming's mountaineering flight, in connection with which the following rude verse has been received from some low fellow who seeks the cloak of anonymity:—

"Our Leeming had an Avro with great big wheels on
And a very special engine that was Avro's joy and pride,
And daily he would take it up
And put it down and shake it up
And land it on a handkerchief, till all the papers cried:—
This is John Leeming—Attaboy!
This is John Leeming—Have a care!
There is'nt any tellin'
He might land upon Helvellyn,
So look out! take cover! beware!"

The Hampshire Aeroplane Club

REPORT for week-ending December 9:—Total flying time, 8 hrs. 41 mins. passenger flying, 5 hrs. 25 mins.; solo flying, 3 hrs. 16 mins.

The following members received instruction:—Lt. Graham, R.N., 20 mins.; Lt. Heinman, R.N., 50 mins.; Messrs. Sheppherd, 15 mins.; Kerry, 25 mins.; Southcliffe, 50 mins.; Molony, 25 mins.; Stokes, 8 mins.; Rumble, 12 mins.; Cooper, 50 mins.; Keeping, 50 mins.; Vaughan, 20 mins.

The following members flew solo:—Messrs. Keeping, 25 mins.; Rumble, 25 mins.; Jones, 15 mins.; Perfect, 46 mins.; Simmonds, 5 mins.; Bowen, 5 mins.; Fry, 5 mins.; F/O. Mellor, 35 mins.; Lt. Graham, R.N., 35 mins.

The Midland Aero Club, Ltd.

REPORT for week ending December 11:—The total flying time was 5 hrs. 5 mins.

The following members made solo flights:—J. Brinton, G. V. Perry, E. J. Brighton, C. L. Knox, R. L. Jackson. Mr. O. L. Richards was given dual instruction.

Fog throughout the week considerably restricted flying.

The first Midland Aero Club Dance was held at the Palace Ballroom, Erdington on Thursday. It was a most enjoyable affair and was well patronised.

The Yorkshire Aeroplane Club

REPORT for the week ending December 10.—The total time flown was 5 hrs. 35 mins. made up as follows:—2 hrs. 15 mins. dual, and 3 hrs. 20 mins. solo.

Messrs. Mann, Marshall, Oglesby and Watson had dual; while Messrs. Dawson, Lax, Mann and Watson went solo. There were 14 flights.

On Saturday, December 4, we were favoured with a really fine day, with the result that two of our members, Messrs. Lax and Watson, under the watchful eye of Mr. Loton, successfully passed the flying tests for their "A" Licence.

In the course of the altitude test Mr. Watson reached 6,500 ft., but Mr. Lax, to make doubly sure, was not content to come down until the 7,000 mark had been attained. At the conclusion of each test one saw Mr. Loton, complete with foot rule, taking precise measurements from the fixed point, and his mind was still somewhat uneasy as to whether one of the turning points (a haystack in this case) had been accurately rounded on each of the figure-of-eight-turns. In future, if we supplied him with a theodolite and could procure the services of someone willing to float a captive balloon immediately above the aforesaid haystack it would save him a lot of worry and incidentally a stiff neck!

As the Aerodrome was again enveloped in a thick fog during the whole of Sunday, it was impossible for any of the others to attempt the tests, so that they will now have to be content to postpone them until after the Christmas vacation, when Mr. Loton will be back from London.

The Club will close down for Christmas on Tuesday evening, December 21, and will re-open on Wednesday, January 5, 1927.

FLIGHT

THE AIR ROUTE TO INDIA

Wireless Equipment on the De Havilland Air Liners

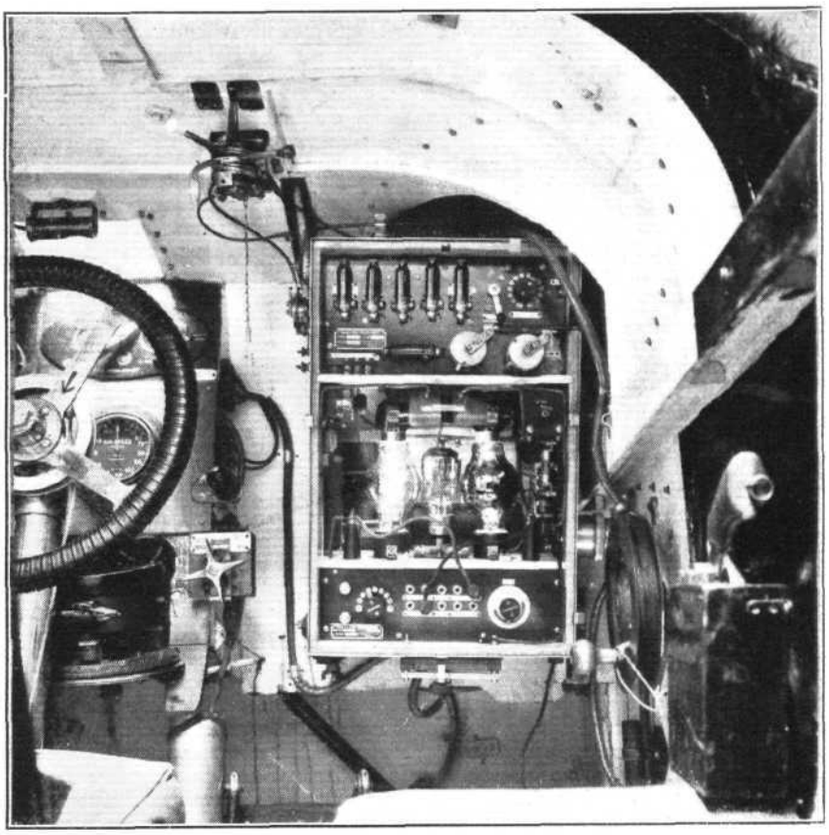
DURING his recent flight to Australia Sir Alan Cobham emphasised the importance to long distance commercial flying service of good ground organisation, wireless communication, and weather reports. These details are being very carefully organised in connection with the new air route to Egypt and India which is being opened by Imperial Airways at the beginning of next year. The giant DH 66 multiple-engined aircraft, described in FLIGHT for July 10 and November 4, last, which will fly on this route will be fitted with the latest type of Marconi 150-watt, All-Purpose, Telephone-Telegraph Aircraft Equipment, Type AD 6, so that they may be in constant touch with ground stations throughout the journey. These installations have been especially modified to suit the conditions existing on this new route. The most interesting development is the employment for the first time of a generator which provides power both for the internal and external lighting of the aeroplane and for the wireless installation. In the past these two requirements have always been treated separately with the consequent provision of two generators, and therefore additional "head resistance."

The generator employed will incorporate other special features inasmuch as it will be driven by a newly-designed, automatic, constant-speed propeller which will maintain the voltage of the machine constant, under varying conditions of load, over an air speed range of approximately 60 to 130 miles per hour. Moreover, in the unlikely event of a forced landing being necessary the same generator can be used to supply emergency power to the transmitter either by the use of the battery normally used for lighting, or, alternatively, if it is desired to work for long periods, by means of a special coupling arrangement to the small petrol engine used for starting the main engines.

Thus even if a machine were forced to land in the solitudes of the desert country which is to be found along almost the entire route, it would be an easy matter to establish wireless communication with the nearest ground station and obtain any required assistance.

The AD 6 set is arranged to work on Telephony or Telegraphy up to ranges of 300-400 miles, and since a chain of Marconi Aerodrome ground stations is being established by the Air Ministry and the various governments concerned at frequent intervals throughout the route the machines will never be out of calling distance of a wireless station.

The wireless requirements of this route have been the subject of very careful consideration by the authorities concerned, and it can safely be stated that the system of communications provided both for the ground and in the aeroplanes will render the Cairo-Karachi route among the safest in the world. A general idea of the installation may be obtained from the above illustration of an A.D.6 set in the Handley Page W.9 air liner.



THE MARCONI TYPE A.D.6 WIRELESS INSTALLATION: Our picture shows this important equipment as fitted in the Handley Page W.9 "Hampstead" of Imperial Airways. On the right will be seen the aerial coiled up on its winch, next to the instrument box (normally completely enclosed) which contains both transmitter and receiver. The remote control switches will be seen to the right of and above the steering wheel. This installation will be fitted, specially modified, in the D.H. 66 Cairo-Karachi machines.

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French Madagascar Flight

LIEUT. BERNARD, who succeeded in flying from Marseilles to Madagascar via Central Africa, started on his return flight on December 11, when he crossed to the mainland at Mozambique. On the trip home he will follow the Great Lakes and Nile Valley route.

Italian Air Accidents

OFFICIAL figures of the Italian Air Ministry show that in eleven months ended October 31 there were twenty military aeroplane accidents, resulting in twenty-two persons being killed and four seriously injured.

Aero Golfing Society

THE Annual Dinner of the Aero Golfing Society will be held at the Royal Aero Club on December 30, at 7 for 7.30 p.m. Dinner 7*s.* 6*d.* Morning dress. Members of the Aero Golfing Society who are not members of the Royal Aero Club, will be elected honorary members for the day.

The Annual Meeting of the Society will be held during the dinner, when the new captain will be elected. *It is hoped that all members will make a special effort to be present.* Members are requested to notify the Secretary beforehand that they will attend.

The Royal Air Force Club

THE Royal Air Force Club will be closed for the Christmas Holidays from midnight on Christmas Day, until 5 p.m. on Tuesday, December 28, except in so far as affects bedroom accommodation (with breakfast only) to residents and members who have engaged bedrooms prior to noon on Christmas Day.

H.M. Aircraft Carrier "Argus."

COMMISSIONED on November 23 for trials, after a long refit, the aircraft-carrier *Argus* (Captain A. R. Palmer) is to pay off and temporarily recommission with a reserve crew at Chatham on December 21, before recommissioning for service in the Atlantic Fleet, in which she was replaced by the *Furious*. This Fleet will then have two carriers, like that in the Mediterranean, although at the moment one of the two in the latter Fleet, the *Hermes*, has been lent to the China Station.

INSPECTION OF FLIGHT CADETS, CRANWELL

ON December 10, Air Chief Marshal Sir Hugh Trenchard, Chief of the Air Staff, made the passing-out inspection of Flight Cadets at Cranwell Cadet College. Air Commodore F. C. Halahan, Air Officer Commanding, in his report, states that at the present time there are 117 Flight Cadets under training, viz.—(*a*) IV Term, 32; (*b*) III Term, 19; (*c*) II Term, 32; (*d*) I Term, 34. During last term, a total of 1,492 hrs. 55 mins. flying, under the various classes, was carried out.

The IV Term, who are now due to pass out and are recommended for commissions, number 32. The average flying time of these cadets is 75 hrs., of which 23 are solo on Service type. (Machines used are Avro, Bristol Fighter, D.H. 9a, and Snipe.) The following awards have been made :—

The Sword of Honour, presented to the best all-round Flight-Cadet in the Senior Term, has been awarded to Flight-Cadet J. Clarke.

The R. M. Groves Memorial Prize, for the best all-round pilot in the Senior Term, to Flight-Cadet J. Clarke.

The Abdy Gerrard Fellowes Memorial Prize, for the Flight Cadet obtaining the highest total marks in Mathematics and Science, has also been won by Flight-Cadet J. Clarke.

The Air Ministry prize in Humanistic subjects has been awarded to Flight-Cadet W. C. Cooper.

The Air Ministry prize in Aeronautical Engineering also goes to Flight-Cadet J. Clarke.

Flight-Cadet Clarke, who thus gains four out of the five awards, is an ex-aircraft apprentice belonging to Carlisle. He was educated at Dalton Grammar School, Dumfries, and at the R.A.F. Aircraft Apprentice School at Halton. He was one of the three selected, in December, 1924, on completion of the 1921 Aircraft Apprentice course, to proceed to the R.A.F. Cadet College, Cranwell, as a Flight Cadet, with a view to becoming a permanent Commissioned Officer in the R.A.F.

Flight-Cadet Cooper is also an ex-aircraft apprentice, from the Electrical and Wireless School, Flowerdown.

The report regrets to have to record the death, as the result of a flying accident, of Flight-Cadet D. G. Harcourt-Wood. This is the fourth fatal accident which has occurred since the formation of the Cadet College in February, 1920, since when 279 cadets have passed out from the College.

Commenting on the various branches of training, the Report states: In aeronautical engineering it is noticeable that cadets, on the whole, do not attach sufficient importance to engineering subjects. The experiment of thesis-writing on aeronautical subjects is proving successful. In wireless telegraphy a higher standard of efficiency could be reached in Morse. Considerable keenness has been displayed in musketry. Further instruction has been given in parachute folding and packing, and all cadets have been provided with parachutes. During the present term the discipline has been good, and the health of the cadets continued to be excellent.

The inspection opened with a drill parade and march past, Sir Hugh taking the salute, after which an examination of the workshops, etc., was made, followed by a flying parade carried out by the Cadets.

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ROYAL AERONAUTICAL SOCIETY

Official Notices

AN extraordinarily attractive and interesting programme of lectures has been arranged for the second half of the lecture session of the Royal Aeronautical Society.

On January 6 Major B. C. Carter, A.R.C.Sc., D.I.C., A.F.R.Ae.S., will lecture on "Dynamic Forces in Aircraft Engines." This lecture will deal in a practical way with many of the vibrational and similar difficulties met with in aero engines and suggested ways of combating them.

Mr. H. Glauert, M.A., F.R.Ae.S., on January 20, will lecture on "The Theory of the Auto-giro." He will produce test figures to substantiate his arguments and will throw a flood of light on many controversial points connected with Senor de la Cierva's amazing invention. This lecture will undoubtedly attract a gathering of the experts, both practical and theoretical, and will go a long way towards substantiating or otherwise the claims made for this remarkable machine.

Mr. A. H. R. Fedden, F.R.Ae.S., is so well known as one of the leading authorities on engines that he needs no introduction. He will lecture on February 1 on one of the most important problems of present aero engine design, "Supercharging for Aero Engines." This is one of those joint lectures which have proved so successful in the past, with the Institution of Automobile Engineers. Mr. Fedden has had a practical experience of his subject second to none in this country.

Major R. H. Mayo, O.B.E., F.R.Ae.S., well known as the technical adviser to Imperial Airways, will speak on February 17 on a subject which is of first-rate importance to the future of civil aviation in this country. The subject of his lecture will be "The Design and Operation of Commercial Aircraft."

On March 3 Mr. L. W. Bryant, B.Sc., A.R.C.Sc., A.F.R.Ae.S. will give his lecture on "The Spinning of Aeroplanes," a subject he has made peculiarly his own.

Mr. M. A. Giblett, M.Sc., will lecture on March 17 on "Line Squalls." The study of meteorology is one which has not been always as fully emphasised as it should be from an aviation point of view, and Mr. Giblett's lecture will widen considerably present knowledge on the subject he has chosen.

The importance of model experiments is one which cannot be exaggerated, and Mr. E. G. Richardson, M.Sc., Ph.D., will emphasise this and point out the value of such experiments on design and stability in his lecture on "Recent Model Experiments in Aerodynamics," which he will deliver on Thursday, March 31.

Major R. E. Penny will lecture on April 28 on "Seaplane Design," and as one who has been intimately connected with the design of seaplanes for many years, his lectures will be one of great practical value.

In May there will be read the Wilbur Wright Memorial Lecture, one of the outstanding lectures of each year. The lecture for 1927 will be by one who is perhaps the best-known authority on aerodynamics in the world, Prof. Prandtl, of Gottingen University. Prof. Prandtl will deliver his lecture in English.

Data Sheets

ARRANGEMENTS have been made for the issue, early in 1927, of data sheets. These sheets will contain abstracted information of use to ground engineers, draughtsmen, and all those engaged in the practical side of the industry. These data sheets will be issued at frequent intervals, and it is to be hoped that all those who wish for such information will write to the Secretary, so that those sheets for which there is a demand are printed as soon as possible.

The data sheets will be printed on an 8 by 5 in. page, convenient for notebooks, with a wide left-hand margin for insertion in the notebooks. They will enable anyone in the industry to collect together, in a convenient, condensed and usable form much of the information now scattered in various works of reference, B.E.S.A. specifications, private notebooks, and the like.

It is hoped that those who have any specialised or unpublished information of any kind which would prove useful to other members of the industry, will communicate with the Secretary, with a view to its publication.

The data sheets will be issued to all members of the society upon application. Any further information with regard to them can be obtained on application to the Secretary.

Visit to Hawker Engineering Co.

ON Saturday, December 18, a visit has been arranged for students and other members of the society to the works of the Hawker Engineering Co. at Kingston. The Hawker Co. are famous for their Heron all-metal single-seater fighter, the Woodcock night fighter, the Hornbill, the most powerful machine of its type in the R.A.F., and the Horsley. The visit will not only prove interesting and instructive, but will enable those who attend it to visualise what mass production is and what the future holds for the aeroplane industry. Any who wish to attend should communicate immediately with the Secretary of the Society.

J. LAURENCE PRITCHARD,
Honorary Secretary.

FLIGHT

THE ROYAL AIR FORCE

London Gazette, December 7, 1926

General Duties Branch

The following Flying Officers are granted permanent commns. in rank stated (Nov. 1) :—T. G. Bird, W. E. Purdin.

The following Pilot Officers are promoted to rank of Flying Officer :—L. Dalton-Morris ; Aug. 25. C. H. Roberts (Lieut., A. and S. Highlanders, R.A.R.O.), E. E. Fallick ; Oct. 14. J. R. Addams ; Oct. 26. V. C. Taylor ; Oct. 31. Pilot Officer on probation, B. J. Bushe-Caryesford, is confirmed in rank ; Nov. 22. Flight-Lieut. J. S. Chick, M.C., A.F.C., is placed on half-pay, scale B, from Dec. 9 to 22, inclusive ; Flight-Lieut. T. S. James is transfd. to the Stores Branch on probation with effect from Nov. 27, and with seniority as a Flight-Lieut. of Jan. 1, 1923.

The following are transfd. to Reserve :—

Class A.—Flight-Lieuts. H. Bligh, L. G. Paget, A.F.C., R. C. Preston, A.F.C. ; Dec. 5. Flying Officers F. H. Bugge, B. A. de Nevers, K. H. Holley, H. N. V. Le V. Noel, D.F.C., R. C. Pretty ; Dec. 5. E. S. Brinsmead, F. Larman, F. B. Robinson ; Dec. 9.

Class B.—Flying Officer C. C. Gissing, M.S.M. ; Dec. 5.

Class C.—Flying Officer C. W. A. Scott ; Dec. 9. Flying Officer A. W. Daly is transfd. to Reserve ; Dec. 9. The following Flying Officers resign their short service commns ; Dec. 8 : R. E. H. Horn, G. H. Jennings-Bramly. Pilot Officer J. L. Chadwick relinquishes his short service commn. on account of ill-health ; Dec. 8.

Stores Branch

Wing Comdr. F. H. Kirby, V.C., C.B.E., D.C.M., is placed on retd. list, and is granted permission to retain rank of Group Capt. ; Dec. 8.

Accountant Branch

The following are granted permanent commns. as Pilot Officers on probation with effect from and with seny. of Dec. 4 :—W. S. Calder, R. S. Sweet, H. D. Connor, H. C. Bakes, J. E. Gregson, B. Chadwell, D. A. K. Yiend, J. H. Glenn, C. M. Johnson.

Medical Branch

The following are granted short service commns. as Flying Officers for three years on the active list, with effect from and with seny. of Nov. 22 :—R. A. W. Kerr, M.B., E. Thompson. G. E. Church, M.B., is granted a short serv. commn. as a Flying Officer, for three years on the active list, with effect from and seny. of Sept. 1, and is seconded for duty with the Royal Albert Edward Infirmary and Dispensary, Wigan, from that date. Flying Officer B. W. Cross is promoted to the rank of Flight-Lieut. ; Dec. 4.

Memorandum

The permission granted to Sec. Lieut. (Hon. Lieut.) B. H. Hardy to retain rank is withdrawn on his enlistment in the T.A. ; Nov. 8.

Reserve of Air Force Officers

The following are granted commns. in General Duties Branch as Flying Officers on probation ; Dec. 7 :—

Class A.—E. B. W. Bartlett, R. H. Lemon, H. Shaw.

Class B.—A. J. G. Anderson, W. G. Gunning.

Pilot Officer on probation R. D. Hambrook is confirmed in rank ; Nov. 24. Flying Officer M. J. Wyatt is transfd. from Class C to Class B ; Dec. 5. Flight-Lieut. A. H. S. Baker, O.B.E., relinquishes his commn. on completion of service and is permitted to retain rank of Sqdn.-Leader ; Dec. 5. Flight-Lieut. W. P. Woodcock relinquishes his commn. on completion of service ; Oct. 24 (substituted for *Gazette*, Nov. 23). The following Flying Officers relinquish their commns. on completion of service : Dec. 5 : G. S. Coggan, W. J. Hannon, L. W. Kitt, S. F. A. Welsh, G. W. Wilson, A.F.C. Flying Officer H. J. Armitage relinqu8shes his commn. on account of ill-health, and is permitted to retain his rank ; Dec. 8. Flying Officer C. R. H. Trevor resigns his commn. ; Dec. 7.

Princess Mary's R.A.F. Nursing Service

Matron Miss M. W. Campbell is placed on the retired list ; Dec. 6. Miss P. K. Pearce resigns her appointment as sister ; Sept. 11.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch

Wing Commander A. W. Tedder, to Air Ministry, Directorate of Training for Air Staff (Training) duties ; 1.1.27.

Squadron Leaders: A. R. Arnold, D.S.C., D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estabt. ; 24.11.26. J. C. M. Lowe, to Air Ministry, Department of the Air Member for Supply and Research ; 7.12.26. C. N. Lowe, M.C., D.F.C., to No. 6 Sqdn., Iraq ; 24.11.26.

Flight Lieutenants : D. S. Earp, D.F.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estabt. ; 24.11.26. L. Darvall, M.C., to R.A.F. Depot, Uxbridge, on transfer to Home Estabt. ; 25.10.26. J. D. Breakey, D.F.C., to Home Aircraft Depot, Henlow ; 2.12.26. G. M. Lawson, M.C., to H.Q., Egypt ; 20.11.26. J. R. Cassidy, to No. 2 Armoured Car Co. and Repair Section, Palestine ; 25.11.26. E. J. D. Townsend, to H.Q., Iraq ; 18.11.26.

Flying Officers : E. R. H. Coombes, to No. 15 Sqdn., Martlesham Heath ; 15.12.26. H. Walker, to No. 24 Sqdn., Kenley ; 15.12.26. I. Hodgson, to R.A.F. Depot, Uxbridge, on transfer to Home Estabt. ; 28.11.26. J. B. V. Glyde, to R.A.F. Depot, Uxbridge, on transfer to Home Estabt. ; 25.10.26. B. J. J. Nimmo, to H.Q., Transjordan and Palestine ; 1.11.26. A. L. MacMillan, to Station H.Q., Kenley ; 1.12.26. J. St. C. Arbuthnott, to R.A.F. Training Base, Leuchars ; 24.11.26. J. G. Franks, to R.A.F. Training Base, Leuchars ; 3.12.26. G. J. Ross, to R.A.F. Depot, Egypt ; 13.11.26. C. V. Lock, to No. 55 Sqdn., Iraq ; 1.11.26. J. W. New, to No. 45 Sqdn., Iraq ; 8.11.26.

Pilot Officer F. H. Collinson, M.C. to No. 14 Sqdn., Palestine ; 26.11.26.

IN PARLIAMENT

Air Service in China

REAR-ADMIRAL SUETER, on December 8, asked the First Lord of the Admiralty whether he can state the number of British aircraft carriers and number of naval aeroplanes and seaplanes stationed in Chinese waters ?

Mr. Bridgeman : There are one aircraft carrier and one cruiser carrying seaplanes in Chinese waters. There is also one cruiser carrying one seaplane *en route* to China.

Rear-Admiral Sueter asked, in the event of a British aircraft carrier serving on the China station becoming damaged through collision in a fog or striking sunken wreckage, necessitating shifting a propeller, or the necessity arising of examining and repairing underwater fittings, where would the ship be dry-docked ; and what distance is this dock from the naval base in those waters ?

Mr. Bridgeman : The China Squadron is based on Hong Kong, where there are ample facilities for docking His Majesty's ships. The second part of the question does not, therefore, arise.

Rear-Admiral Sueter asked whether, in view of the menace to British nationals and British property in China waters, the air resources at the disposal of the British naval commander-in-chief on the China station are considered adequate ?

Mr. Bridgeman : The answer is in the affirmative.

Airship Guarantee Company

MR. VIANT asked the Secretary of State for Air if the £60,000 appearing in the 1925 Air Estimates, or any part of that sum, has been paid to the Airship Guarantee Company ; and, if so, on what date ?

Sir Philip Sassoon : No, Sir. The sum of £60,000, which was taken in the Air Estimates, 1925, was not earned and lapsed, as an unspent provision. A sum of £30,000 has been taken in the current year's Estimates, and is expected to be earned and paid.

Aircraft Disposals Co. Ltd.

MR. VIANT asked the Secretary of State for Air the sum or sums of money paid by the Aircraft Disposals Co., Ltd., in respect of the surplus aeroplanes, engines, spares, etc., and warlike stores acquired from the Air Ministry ?

The Financial Secretary to the Treasury (Mr. Ronald McNeill) : I have been asked to reply. The moneys received up to the present by the Disposal Board in respect of the sale in question amount to £1,014,891. A further sum of £55,597 13s. 2d. is due from the company and is payable, subject to interest, by five quarterly instalments, the next instalment being due on December 25.

R.A.F. Operations in Iraq

MR. VIANT asked the Secretary of State for Air the number of machines that have been written off charge as a result of enemy action during the period of January 1 to November 18, 1926 ; who were the enemies ; and what were the circumstances and the nature of the service upon which the aeroplanes were at the time employed ?

Sir S. Hoare : The answer to the first part of the question is one aeroplane. As regards the remaining parts of the question, the aeroplane was carrying out a reconnaissance in the Sulamanie district of Iraq on the 14th June to locate followers of the rebel Kurdish chieftain, Sheikh Mahmud. The aeroplane had a forced landing, and was seized, looted and destroyed. The occupants were held in captivity for some months by Sheikh Mahmud, but were eventually released.

R.33 Experimental Flights

MR. WELLS asked the Secretary of State for Air if he proposes to make use of the airship R.33 for further experimental flights during next year.

Sir S. Hoare : No decision has yet been reached in regard to any experimental flights of R.33 next year. I may say, however, that no further flights are contemplated in connection with the present programme.

R.A.F. Accidents

MR. HORE-BELISHA, on December 9, asked the Prime Minister whether he will allot a day before the House rises to discuss the position created by the continued sequence of accidents in the Air Force ?

The Prime Minister : I regret that I cannot give time for this discussion. Though I deeply deplore such accidents, I am satisfied that every possible precaution has been and will continue to be taken to safeguard the lives of the Royal Air Force personnel.

Capt. Garro-Jones asked the Secretary of State for Air what is the routine system of investigation into aeroplane accidents in the Royal Air Force ; how long it has been in force ; and whether he will consider any strengthening of the system of investigation from headquarters ?

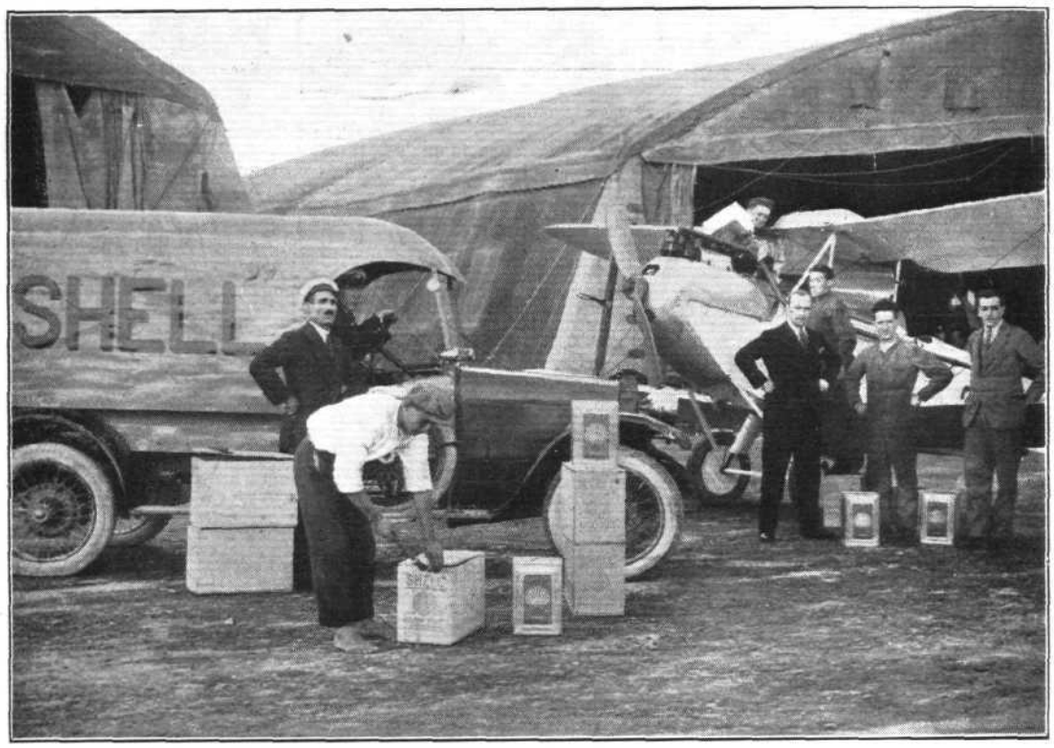
Sir Philip Sassoon : As regards the first part of the question, the routine procedure in connection with the investigation of flying accidents is laid down in detail in paragraphs 1312 and 1313, King's Regulations and Air Council Instructions, 1924, from which it will be seen that a Service Court of Inquiry is held on all serious accidents. The reports of all Courts of Inquiry are, of course, scrutinised in detail at the Air Ministry with the utmost care. An entirely independent investigation is also made into every serious accident by the Inspector of Accidents of the Air Ministry, who renders his reports direct to the Secretary of State. In the light of his report and that of the Service Court of Inquiry all possible steps are taken to prevent a recurrence. In addition, the details of all flying accidents and forced landings are summarised every six months and investigated statistically with a view to elucidating recurring causes of accidents and other statistical inquiries on special aspects of the problem, such as engine failures, are constantly undertaken. For further information in regard to the measures taken to prevent accidents I would refer to the replies given on November 22 and 25 to Col. Gretton and Mr. Robinson, respectively. As regards the second part of the question, the present system has been in force, subject to minor changes, since the inception of the Royal Air Force. As regards the last part, I am not clear how the present system of investigation could be strengthened, but the question of the prevention of accidents is one which engages constantly the attention of the Secretary of State and of the Air Council, and if it is found that anything more can be done than is being done at present, whether by way of strengthening the investigation or otherwise to prevent crashes, the hon. and gallant member may be assured that it will be done.

Capt. Garro-Jones : Could not the hon. baronet strengthen the system under which only one officer makes a supplementary inquiry for the Air Ministry, especially in view of the fact that in many cases that officer has not been able to assign any cause for the accident ?

Sir P. Sassoon : I am satisfied that all precautions are being taken to make the investigation of accidents as strong as possible, but my right hon. friend will be glad to receive any suggestions which the hon. and gallant member may have in mind.

Capt. Garro-Jones : I did not say anything about precautions, but I asked whether it was possible for the system under which only one officer makes an investigation to be strengthened. Could not two or three officers join in these investigations in order to have the benefit of more than one head ?

Sir P. Sassoon : There are two separate inquiries composed of a sufficient number of people to do the work efficiently.



Eastward Ho! by "Moths": Having once got clear of the bad weather hold-ups in England and France, Capt. Stack and Mr. Leete, of the Lancashire Aero Club, are now making good progress towards India in their D.H. "Moths." Our picture shows them (Capt. Stack on the left and Mr. Leete on the right, in front of the machine) superintending the refuelling with "Shell" spirit at Malta.

A Successful Italian Magneto

ONE of the "little" things that matter in the winning of such contests as the Schneider Cup race is the ignition employed on the engine of the machine concerned. Responsibility falls heavily, in fact, upon poor Mr. Magneto, for in all probability the reputation of the finest of aeroplanes and engines may seriously be impaired by his failing to carry out his duties to the best advantage. In this year's Schneider contest, which was won by Maj. Bernardi on the Macchi M. 39 mono-seaplane at an average speed of 246·496 m.p.h., it may be of interest to note that the 800 h.p. Fiat A.-S.2 engine fitted in this machine, was equipped with two Marelli 12-cyl. double spark, aeroplane magnetos. This magneto, which is handled in this country by Marelli Magnetos (England), Ltd., of 17, Wells Street, Oxford Street, W.1, are giving very satisfactory results with the various aero engines to which they are fitted. The recent flight from New York to Buenos Aires by *Sen. Duggan* on a Savoia flying-boat piloted by Capt. E. Oliveiro, was made with the help of one of these magnetos (type MF. 12).

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IF we were asked which "Annual" we considered the best useful value in the world, we should unhesitatingly say "Whitakers"—with one "t." For every business man and the general run of citizen, it is simply invaluable, and at the price of 6*s*.—or in a condensed and popular form, 1*s*. 6*d*.—it makes one wonder how it is done. Its up-to-dateness upon all things that matter in daily reference is astounding. Although 1927 edition is only just published, items, barely a fortnight or so old, are set out accurately, and it is only by diligent study one can really appreciate the huge amount of official and useful data which is contained within the well-known "green-red" binding—a binding now familiar to us for close upon 60 years. Truly, no office shelf can be regarded as complete whilst a copy of "Whitakers'" is absent.

Not a 5-in. Aircraft Gun

IT will, perhaps, hardly be necessary for us to draw our readers' attention to the fact that, contrary to the statement made on p. 810*o* of last week's issue of FLIGHT, Messrs. Vickers, Ltd., are not *yet* manufacturing "5-in." guns for aircraft. The Vickers Automatic gun referred to, which is made together with other aircraft guns at their Erith factory, is, of course, of "0·5-in." calibre—that elusive decimal-point having got overlooked in the rush of getting out our special number. No doubt, in the near future, aircraft *will* carry 6-in. guns or similar armament! We wish, also, to apologise to our readers and to Messrs. Vickers for our carelessness in placing the "Eagle" aerial camera, in the same article, *on its side*, instead of pointing downwards, as it should do like all well-behaved aerial cameras!

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